

REALIZING THE POTENTIAL OF HYDROPOWER AS A CLEAN, RENEWABLE AND DOMESTIC ENERGY RESOURCE

OVERSIGHT HEARING

BEFORE THE
SUBCOMMITTEE ON WATER, POWER AND OCEANS
OF THE
COMMITTEE ON NATURAL RESOURCES
U.S. HOUSE OF REPRESENTATIVES
ONE HUNDRED FOURTEENTH CONGRESS
SECOND SESSION

Wednesday, April 27, 2016

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OVERSIGHT HEARING ON REALIZING THE POTENTIAL OF HYDROPOWER AS A CLEAN, RENEWABLE AND DOMESTIC ENERGY RESOURCE

**Wednesday, April 27, 2016
U.S. House of Representatives
Subcommittee on Water, Power and Oceans
Committee on Natural Resources
Washington, DC**

The subcommittee met, pursuant to notice, at 2:03 p.m., in room 1324, Longworth House Office Building, Hon. John Fleming [Chairman of the Subcommittee] presiding.

Present: Representatives Fleming, Gosar, McClintock, LaMalfa, Denham, Newhouse; Huffman, Napolitano, Costa, and Torres.

Dr. FLEMING. The Subcommittee on Water, Power and Oceans will come to order.

The subcommittee meets today to hear testimony on an oversight hearing entitled, "Realizing the Potential of Hydropower as a Clean, Renewable and Domestic Energy Resource."

We will begin with opening statements, starting with myself.

STATEMENT OF THE HON. JOHN FLEMING, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF LOUISIANA

Dr. FLEMING. Today's hearing will delve into the topic of America's largest source of renewable energy: hydropower. Harnessing the power of moving water has been around since Greek civilization. But modern hydropower as we know it began in the 1880s with engineering innovations here in America. It helped transform our country by electrifying both urban and rural communities. Large-scale dams even helped us win World War II by powering the factories needed to build the armaments necessary to defeat our enemies.

Even my home state of Louisiana benefits from hydropower, with rural communities continuing to receive hydropower generated regionally from Army Corps of Engineers dams and from other sources. There is vast potential for new hydropower facilities throughout Louisiana and the rest of the country.

[Slide]

Dr. FLEMING. According to this Oak Ridge National Laboratory 2013 map depicted on the screen, up to an additional 12,100 megawatts of hydropower on existing non-power dams alone could be added to our electricity mix. That is a 15 percent increase from our existing hydropower capacity. According to this map, much of that could come from the Mississippi watershed and east. That is not to say that all of these facilities could or should be built due to a number of factors, but we clearly have room to grow.

Despite all of this potential, the former director of the Federal Energy Regulatory Commission's Energy Projects testified before this committee a few years ago that hydropower's growth is "stagnant." He cited a non-partisan Energy Information Administration report that found that there was no net increase in hydropower capacity in the last decade. He compared this to the growth of natural gas facilities, even when gas prices were high, and noted that the market simply ignored hydropower. His extensive experience led him to conclude that "the issue of dispersed decision-making, as represented by multiple agencies with mandatory conditioning authority . . . should be considered as a primary reason for the complete lack of progress" in hydropower development.

He was referring to the mandatory conditioning authorities used by the natural resources agencies in this committee's jurisdiction and others. The U.S. Fish and Wildlife Service, NOAA, the U.S. Forest Service, the Bureau of Land Management, and others have the ability to impose conditions on any utility which wants to license or re-license hydropower facilities. Depending on the facility, these mandatory costs can be significant for ratepayers. As this committee heard, some of these conditions have no cost benefit analysis, and there is little transparency in how the resource agencies devise them.

In addition, some of these conditions actually conflict with each other, which is a recurring theme we have heard time and time again in this committee. The Federal agencies can literally give the thumbs-up or thumbs-down on some of these projects by proposing unrealistic or uneconomic conditions.

In today's hearing, we will mostly hear from those who represent ratepayers who not only pay the regulations imposed on them by the agencies, but who pay for the agencies to regulate them. At some point later, as in past hearings on similar topics, our intent is to call the agencies before us to give their side of the story. Federal law was improved in 2005, but as we will hear today, further improvements are necessary.

We have utilities before us who rely on hydropower and want to continue using this clean, renewable, and emissions-free resource at reasonable prices. The questions will be whether they can continue to do so in the current environment, and whether the hydropower resource can be a resource for the future or one that has passed its prime because Federal agencies helped suffocate it. We can help answer those questions today and have the power to steer this ship in a positive direction.

[The prepared statement of Dr. Fleming follows:]

PREPARED STATEMENT OF THE HON. JOHN FLEMING, CHAIRMAN, SUBCOMMITTEE ON
WATER, POWER AND OCEANS

Today's hearing will delve into the topic of America's largest source of renewable energy: hydropower.

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Even my home state of Louisiana benefits from hydropower, with rural communities continuing to receive hydropower generated regionally from Army Corps of Engineers dams and from other sources.

There is vast potential for new hydropower facilities throughout Louisiana and the rest of the country. According to this Oak Ridge National Laboratory 2013 map depicted on the screen, up to an additional 12,100 megawatts of hydropower on existing non-powered dams alone could be added to our electricity mix. That's a 15 percent increase from our existing hydropower capacity. According to this map, much of that could come from the Mississippi watershed and east. That's not to say that all of these facilities could or should be built due to a number of factors, but we clearly have room to grow.

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Dr. FLEMING. Before I recognize the Ranking Member, I will have to apologize. I have to excuse myself and ask Dr. Gosar to sit in for me, as I am in a markup with another committee.

So with that, I recognize the Ranking Member, Mr. Huffman.

STATEMENT OF THE HON. JARED HUFFMAN, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF CALIFORNIA

Mr. HUFFMAN. Thank you, Mr. Chairman. And thanks to our witnesses and everyone here for this important discussion. I think it is important because hydropower can be a source of inexpensive, relatively clean energy. I have long been a supporter of responsible hydropower development, as long as it is consistent with our land-mark environmental protections, and the protection of tribal and recreational opportunities.

In the last Congress, because I care about making the regulatory process work better, I supported both the Small Conduit Hydro-

power Act and the Hydropower Regulatory Efficiency Act. These were bills that exempted some hydropower projects from licensing requirements, and they authorized non-Federal hydropower development at Bureau of Reclamation projects. I was glad to do this, because these bills promote private hydropower development, while also preserving public rivers that belong to all Americans. Both of these bills did not disrupt long-standing Federal protection of public land and tribal resources, and that is important because striking that balance has always been essential to making hydropower work, I believe.

When hydropower is improperly sited or operated, it can have major impacts, and we need to bear that in mind. It can cause serious harm to fish and wildlife, water quality, recreational opportunities, and tribal lands. I am looking forward to hearing from all of our witnesses, but I am especially glad that we have on the panel Ms. Mary Pavel from the Skokomish Indian Tribe, who will talk to us about some of the harm that can be caused when we do not strike the right balance in licensing hydro projects.

Mary's tribe in Washington State was gravely impacted by a hydropower project that dried up part of the Skokomish River, completely destroyed the tribe's salmon fishery, flooded nearly one-third of the reservation, and irreparably destroyed the tribe's principal means of livelihood. Sadly, Mr. Chairman, this is just one of many examples of a poorly permitted hydro project and how it can cause serious damage to stakeholders.

In the early 20th century, the Federal Government allowed hundreds of permits to build dams on the public's rivers. The licensing process frequently did not take into account—seriously, at least—any of the effects of these facilities on fisheries, recreation, or tribal and public lands. Although the ingenuity and industriousness of our forebears was laudable, is laudable, today, thanks to science and real-world experience, we simply know that we can do better.

And recognizing the damage caused by such a lax permitting process in the past, in recent decades Congress has redoubled efforts to strike that balance. In 1986, Congress passed a law called the Electric Consumer Protection Act, that required FERC to give equal consideration to recreation, fisheries, energy conservation, and energy generation when issuing hydropower licenses.

The legislation limited FERC's ability to simply reject expert advice from natural resource agencies and tribes concerning fish, wildlife, and tribal needs. And this was a consensus bipartisan bill supported by folks in both parties, signed into law by that extremist environmentalist, Ronald Reagan.

Congress next amended the hydropower licensing process in 2005 when it passed the Energy Policy Act. That legislation—again, bipartisan, signed by President Bush—included provisions that made the permitting process for hydropower licenses much easier, gave the hydro industry some additional procedural options in complying with environmental protections, but it did not compromise the fundamental integrity of the balancing system that the Federal Government has tried to maintain.

Now, unfortunately, I am concerned that some of the provisions in H.R. 8, the recently passed House Energy bill, would undermine the ability of states and Federal natural resource agencies to place

reasonable conditions on hydropower licenses in order to strike that balance, and in order to protect tribal and public lands, safeguard water quality, and fishery resources. The legislation would also jeopardize industries that rely on healthy rivers, including the commercial and recreational fishing industry and the outdoor recreation industry.

I certainly recognize that some hydropower licenses are currently facing permitting challenges. Many of these projects predated many of the environmental laws that they are now being asked to comply with for the first time, in what is famously a very long and expensive re-licensing process. I am very interested in working with all the stakeholders in finding ways to make that more efficient, to reduce the burden, but also, as we do that, to maintain that important balance. I will look forward to the testimony and the discussion we have today. Thank you.

[The prepared statement of Mr. Huffman follows:]

PREPARED STATEMENT OF THE HON. JARED HUFFMAN, RANKING MEMBER,
SUBCOMMITTEE ON WATER, POWER AND OCEANS

Thank you, Mr. Chairman, and thanks to our witnesses and everyone here for this important discussion.

I think it is important because hydropower can be a source of inexpensive, relatively clean energy. I have long been a supporter of responsible hydropower development as long as it's consistent with our landmark environmental protections and the protection of tribal and recreational opportunities. In the last Congress—because I care about making the regulatory process work better—I supported both the Small Conduit Hydropower Act and the Hydropower Regulatory Efficiency Act. These are bills that exempted some hydropower projects from licensing requirements and they authorized non-Federal hydropower development at Bureau of Reclamation projects.

I was glad to do this because these bills promote private hydropower development while also preserving public rivers that belong to all Americans. Both of these bills did not disrupt long-standing Federal protection of public land and tribal resources and that's important because striking that balance has always been essential to making hydropower work, I believe. When hydropower is improperly sited or operated, it can have major impacts and we need to bear that in mind. It can cause serious harm to fish and wildlife, water quality, recreational opportunities and tribal lands.

I'm looking forward to hearing from all of our witnesses but I'm especially glad that we have on the panel Ms. Mary Pavel from the Skokomish Indian Tribe who will talk to us about some of the harm that can be caused when we don't strike the right balance in licensing hydro projects. Mary's tribe in Washington State was gravely impacted by a hydropower project that dried up part of the Skokomish River, completely destroyed the tribe's salmon fishery, flooded nearly one-third of the reservation, and irreparably destroyed the tribe's principal means of livelihood. And sadly, Mr. Chairman, this is just one of many examples of a poorly permitted hydro project and how it can cause serious damage to stakeholders. In the early 20th century, the Federal Government allowed hundreds of permits to build dams on the public's rivers. The licensing process frequently did not take into account, seriously at least, any of the effects of these facilities on fisheries, recreation, or tribal and public lands. And although the ingenuity and industriousness of our forebears was laudable, is laudable, today, thanks to science and real world experience, we simply know that we can do better.

Now recognizing the damage caused by such a lax permitting process, in the past, in recent decades Congress redoubled its efforts to strike that balance. In 1986, Congress passed a law called the Electric Consumer Protection Act that required FERC to give equal consideration to recreation, fisheries, energy conservation, and energy generation when issuing hydropower licenses. The legislation limited FERC's ability to simply reject expert advice of natural resource agencies and tribes concerning fish, wildlife, and tribal needs. And this was a consensus, bipartisan bill supported by folks on both parties signed into law by that extremist environmentalist Ronald Reagan.

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Now unfortunately, I'm concerned that some of the provisions in H.R. 8, the recently passed House Energy bill, would undermine the ability of states and Federal natural resource agencies to place reasonable conditions on hydropower licenses in order to strike that balance and in order to protect tribal and public lands, safeguard water quality, and fishery resources. Legislation would also jeopardize industries that rely on healthy rivers, including the commercial and recreational fishing industry and the outdoor recreation industry.

Now, I certainly recognize that some hydropower licensees are currently facing permitting challenges. Many of these projects are predated. Many of the environmental laws that they're being asked to comply with for the first time, in what is famously a very long and expensive relicensing process. I'm very interested in working with all the stakeholders in finding ways to make that more efficient, to reduce the burden, but also as we do that to maintain that important balance and I look forward to the testimony that we have today.

Thank you.

Dr. GOSAR [presiding]. I thank the gentleman.

I now recognize myself as both the Acting Chair and Vice Chair, for my opening statement.

STATEMENT OF THE HON. PAUL A. GOSAR, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF ARIZONA

Dr. GOSAR. Hydropower may not be the most exciting or new energy out there, maybe because it was old news for so long. Hydropower is a hidden resource. Its blades are often covered by concrete. They do not spin on mountaintops and they do not look like giant mirrors. But they have a proven track record of keeping the lights on and they actually enable other renewable technologies by acting as their backup battery. Hydropower has been good for the western United States, which wouldn't be what it is today without it.

The Bureau of Reclamation's Colorado River flagship dams, the Glen Canyon and Hoover, provide clean power for millions, including Arizonans. Customer funding helped keep these facilities up to date, and they will continue into the future.

But, hydropower deserves a renaissance. There is a vast potential to produce more hydropower through existing powered and non-powered dams, there are opportunities to build new dams, and to encourage investment in pumped storage, tidal and conduit hydropower projects, just to name a few. New turbine designs and technologies improve hydropower efficiency and protect more fish every year.

This should be a target-rich environment. Entrepreneurs and utilities want Hydropower 2.0 in the 21st century. But will Federal agencies let them have it? So far, at least to me, the answer is no, or a close maybe. The Federal Government is way behind the curve.

The Bureau of Reclamation is one such example. In 2013, two bipartisan laws encouraging hydropower construction through regulatory simplification on thousands of miles of Federal and non-Federal canals and pipes were supposed to unleash development.

It is succeeding on non-Federal canals, but there is little to show on Bureau of Reclamation conduits, other than new Federal rules.

The Forest Service and the Bureau of Land Management collectively have non-Federal hydropower projects that generate almost 23,000 megawatts on their lands. That is the installed generating capacity of 11 Hoover Dams. Yet, they both come into constant conflict with utilities, and even another Federal partner, as was the case with the C.C. Cragin pipeline in northern Arizona. The Forest Service is in the midst of resurrecting its Groundwater Directive through planning documents that would only make it harder to build and re-license projects.

[Slide]

Dr. GOSAR. The Chairman rightly pointed to this map earlier. A lot of development could occur on Federal land. In fact, as the next chart says, almost 900 megawatts—this is one of those eye-challenging charts.

[Laughter.]

Dr. GOSAR. It is constantly an eye test in this committee.

Nine hundred megawatts could be generated at non-powered dams that are on lands managed by the Who's Who of Agencies, well known by this committee. That is a large coal plant—not that there is anything wrong with coal, especially Navajo and Hopi coal.

Given what we have heard in years past, and some of the issues presented today, the chances of new, wide-scale development on those lands is about as good as getting a foot of snow in Phoenix in August, or anytime for that matter.

At some point, we will hear from the Federal agencies, and they will crow about the inter-agency memoranda they have signed in an effort to boost hydropower. Yet so far, those efforts have proven relatively hollow.

Let's not forget about modernizing our existing facilities. Over 24 percent of existing non-Federal facilities are up for re-licensing over the next 5 years.

[Slide]

Dr. GOSAR. This map shows the facilities that are on the bubble for re-licensing before 2023. This is staggering, when you think about it, given the issues facing many of these utilities and ratepayers.

We can do better. The Federal Government needs to adapt to the times and catch up with the proactive attitude of those who have done and want to do something. An improved, transparent re-licensing process that yields timely results can be a win-win for ratepayers and the environment.

I want to thank the witnesses who have traveled here today from across the country to help improve this process in a productive and positive way. You are leaders in the hydropower world, and we stand ready to work with you.

[The prepared statement of Dr. Gosar follows:]

PREPARED STATEMENT OF THE HON. PAUL GOSAR, A REPRESENTATIVE IN CONGRESS
FROM THE STATE OF ARIZONA

Thank you for holding this hearing.

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Let's not forget about modernizing our existing facilities. Over 24 percent of existing non-Federal facilities are up for re-licensing over the next 5 years. This map shows the facilities that are on the bubble for re-licensing before 2023. This is staggering when you think about it given the issues facing many of these utilities and ratepayers.

We can do better. The Federal Government needs to adapt to the times and catch up with the proactive attitude of those who have done and want to do something. An improved, transparent re-licensing process that yields timely results can be a win-win for ratepayers and the environment.

I want to thank the witnesses who have traveled here today from across the country to help improve this process in a productive and positive way. You are leaders in the hydropower world and we stand ready to work with you.

Dr. GOSAR. We will now hear from our panel of witnesses. Each witness' written testimony will appear in full in the hearing record. So, I ask that the witnesses keep their oral statements to 5 minutes, as outlined in our invitation letter to you, and under Committee Rule 4(a).

I also want to explain our timing lights, and how they work. When you begin to speak, our clerk will start the timer. You will see this right here go to a green light. After 4 minutes, a yellow light will appear. At that time, you should begin to try to conclude

your statement. At 5 minutes, the light will turn red. I ask you to complete your sentence, but we may ask you to stop thereafter.

Now, here are today's witnesses. First, Ms. Debbie Powell, Senior Director of Power Generation Operations for the Pacific Gas and Electric Company, which is based out of San Francisco, California, and covers much of California; Mr. Steve Boyd, Director of Water Resources and Regulatory Affairs for Turlock Irrigation District, based in Turlock, California. Two Californians, wow, that is good.

Mr. HUFFMAN. It is looking up around here.

Dr. GOSAR. Yes.

[Laughter.]

Dr. GOSAR. Ms. Mary Pavel, Attorney for Sonosky, Chambers, Sachse, Endreson & Perry LLP, based in Washington, DC; and Ms. Jessica Matlock, Director of Government Relations for the Snohomish County Public Utility—did I say it right?

Ms. MATLOCK. Yes.

Dr. GOSAR. OK. District Number 1 in Everett, Washington.

Hey, where are the Arizona witnesses?

[Laughter.]

Dr. GOSAR. I now recognize Ms. Powell for her testimony.

You have 5 minutes.

STATEMENT OF DEBBIE POWELL, SENIOR DIRECTOR OF POWER GENERATION OPERATIONS, PACIFIC GAS AND ELECTRIC COMPANY, SAN FRANCISCO, CALIFORNIA

Ms. POWELL. Good afternoon and thank you. I am Debbie Powell, Senior Director of Power Generation Operations at Pacific Gas and Electric Company. PG&E is one of the Nation's largest utilities. We are also the owner and operator of America's largest investor-owned hydroelectric system, with 26 FERC licenses. This means we are regularly in the process of re-licensing multiple FERC projects.

Our system generates nearly 3,900 megawatts of clean power for millions of Americans and Californians. Hydropower is safe, clean, reliable, and affordable. It is a greenhouse gas resource of energy that provides important benefits to the overall power system, particularly systems with significant amounts of intermittent renewable generation.

PG&E is encouraged that Federal legislation is advancing in both Houses of Congress to promote hydropower development, including modest improvements to the licensing processes. We remain hopeful that the House and Senate bills can eventually be reconciled between leaders of both chambers, and presented to the President for his signature in 2016. Congress now has an important opportunity to build on that progress by further improving the hydropower licensing and re-licensing processes. Common sense and basic reforms can make these processes more efficient, while keeping in place the environmental protections, stakeholder engagement, community improvements, and facility upgrades we all agree are necessary and critical.

PG&E places a priority on using collaborative processes to navigate a hydroelectric facility through re-licensing. But as it stands today, the prescribed processes are overly complex, unnecessarily prolonged, insufficiently coordinated, and needlessly expensive. To put this in perspective, PG&E's recent experience is that it takes

more than 7 years and often more than 10 years to renew a FERC license for an existing fully operational project.

The cost just to complete the re-licensing process for the continued operation of a facility has ranged from tens of millions to over \$50 million. And implementing the requirements of the new license often ranges from several million to over \$100 million. All of these costs are ultimately shouldered by the energy consumer.

The re-licensing process involves numerous Federal and state agencies and other stakeholders with interests that may not always align. Therefore, we believe the process should be improved to focus on the following: assure environmental protections and preserve hydropower; achieve the benefits of re-licensing sooner; reduce cost and improved predictability of outcomes; and enhance the collaborative process to be results- and solutions-oriented.

Furthermore, we recommend a number of specific improvements to address these licensing matters, including improved coordination between Federal and state environmental reviews, to include imposing a controlled schedule for all parties involved; better definition of the extent of authorities of the Federal agencies; improved Federal and state agency coordination and transparency; and establish a process for a single challenge opportunity before FERC to resolve issues.

For example, in California we are working to help make our state environmental review follow a parallel path with the Federal reviews, including relying on the same data and studies. To date, this process has generally been sequential and separate, at times resulting in conflicting licensing conditions. And such conditions sometimes have extended to private lands, where there is no clear nexus to the project.

Regarding land use, we clearly recognize the right of Federal agencies, as landlords, to place conditions on the lands they manage, if a license is using them for hydropower. However, we do not believe these agencies should have unilateral authority to condition private land associated with the project. Moreover, Congress should remain in the position to define the extent of that authority, not the courts or endless litigation.

We also understand that agencies have different missions and perspectives on what license conditions are appropriate, but there can and should be better coordination to avoid duplication of effort and confusing or conflicting requirements being issued by multiple agencies. These are all common-sense improvements.

We know that Congress has an important opportunity to modernize the hydropower licensing processes. PG&E looks forward to working with you to advance these long-overdue measures in 2016 and beyond. Thank you.

[The prepared statement of Ms. Powell follows:]

PREPARED STATEMENT OF DEBBIE POWELL, SENIOR DIRECTOR, POWER GENERATION OPERATIONS, PACIFIC GAS AND ELECTRIC COMPANY

Good afternoon Chairman Fleming, Ranking Member Huffman, and members of the Water, Power and Oceans Subcommittee. My name is Debbie Powell, and I serve as Senior Director of Power Generation Operations at Pacific Gas and Electric Company (PG&E).

I am pleased to appear before the subcommittee on the issue of "Realizing the Potential of Hydropower as a Clean, Renewable and Domestic Energy Resource." PG&E appreciates the time and consideration the Natural Resources Committee

and Congress are giving to the need to invest in and modernize our Nation's energy infrastructure to make it more reliable, more resilient and better able to support the 21st century economy. Hydropower licensing reform is a critical component of this effort, given the important role that water plays in energy production and consumption, combating climate change, renewable energy integration, habitat restoration, and recreation, to name just a few.

PG&E is one of the largest combined natural gas and electric utilities in the United States. Based in San Francisco, with more than 23,000 employees, the company delivers some of the Nation's cleanest energy to nearly 16 million people—or 1 in 20 Americans—throughout a 70,000-square-mile service area in Northern and Central California.

PG&E also owns and operates one of the Nation's largest investor-owned hydroelectric systems, which is built along 16 river basins and stretches more than 500 miles. PG&E's 67 powerhouses, including a pumped storage facility, have a total generating capacity of 3,888 megawatts (MW)—enough to meet the needs of nearly 4 million homes with carbon-free energy. The system relies on approximately 100 reservoirs located primarily in the higher elevations of California's Sierra Nevada and Southern Cascade mountain ranges.

PG&E's hydroelectric system consists of 26 federally licensed projects. Since 2000, PG&E has completed 10 hydropower re-licensing proceedings representing 1,140 MW. PG&E has seven "active" hydropower re-licensing proceedings, which represent an additional 1,131 MW.

PG&E actively manages its hydroelectric system to ensure the safety of the public and our workforce; protect wildlife habitat and sensitive species; and maintain access to popular recreation areas, including campgrounds, picnic areas, boat launches, walking and hiking trails, fishing, and whitewater flows. We know first-hand, the infrastructure needs, responsibilities and challenges related to maintaining, operating and re-licensing this clean, reliable and valuable resource.

As required by Federal and state regulatory agencies, PG&E evaluates and mitigates the projects' impacts on natural resources and the environment. We have made it a priority to work collaboratively with stakeholders, including Federal and state agencies, local community members, environmental organizations, fishing interests and other recreationalists, and agricultural landholders, among others, during the re-licensing process. Together, we work to assess the impacts of these projects, identify the issues of importance, develop plans to protect fish and wildlife habitat, enhance recreational uses, and improve water quality and flow management. We believe this collaborative approach best serves the public interest, as we recognize that many entities and individuals rely on the various watersheds, which include our facilities.

As it stands today, however, the prescribed licensing processes in place are overly complex, unnecessarily protracted, insufficiently coordinated, and needlessly expensive. In the simplest terms, we strongly support greater efficiency and transparency in the re-licensing process, and the expeditious conclusion of the re-licensing process so that the environmental protections and benefits negotiated during that process can be implemented faster and more efficiently.

Hydropower is an invaluable, renewable resource that our country can and should do more to capitalize on to help us meet greenhouse gas goals necessary to avert the worst impacts of climate change. Hydroelectricity is a greenhouse gas-free source of energy that provides important benefits to the overall power system, particularly systems with significant amounts of intermittent renewable generation, such as wind and solar, as well as to energy consumers across the country. According to the National Hydropower Association, using hydropower avoids approximately 200 million metric tons of carbon pollution in the United States each year—the equivalent of 42 million cars. It is a flexible resource, a domestic resource and a carbon-free resource. And we believe it is a resource that we must continue to use now and in the future.

We appreciate all the efforts made to date by Congress to advance hydroelectric generation, and we believe that today's hearing by the Natural Resources Committee is another very important step to continue this progress. Moreover, we applaud the 114th Congress for advancing comprehensive energy bills that have included provisions to modernize the hydropower licensing process. We remain hopeful the House and Senate bills can be reconciled between leaders of both chambers and presented to the President for his signature in 2016. PG&E fully supports this process and will remain an active voice in the sharing of our experiences related to realizing the full potential of hydroelectric power.

While these steps on the Federal legislative front have been encouraging, the regulatory approval process still remains a significant challenge, and future action at the Federal level is necessary to ensure the continued operation of existing hydropower and support for growth of new hydropower. Improving the efficiency of the licensing and re-licensing processes is paramount. PG&E believes that it is critical for hydroelectric power generators to be able to move through the re-licensing process more efficiently and more affordably, so that we can implement environmental protections, community improvements and facility upgrades proposed during re-licensing much more quickly than we can today. Delays in the re-licensing process serve only to delay such needed improvements and add costs, which are ultimately borne by the energy consumer.

HYDROPOWER: A DOMESTIC AND CLEAN RESOURCE

At approximately 100 gigawatts of installed capacity, hydropower is America's largest renewable energy resource, producing half of the country's renewable power. In addition to providing tens of millions of American homes with clean and affordable power each year, hydropower also provides benefits to recreation, flood control, irrigation, navigation, and water supply, among others.

In order to capitalize on hydropower's existing capacity and future potential, addressing key challenges within the existing hydropower licensing process is necessary. In PG&E's experience, the process to re-license existing hydroelectric projects requires extensive consultation with multiple state and Federal agencies that consistently takes at least 7 years, and frequently lasts more than 10 years. For example, the re-licensing of the Poe Project is now in year 18.

Meanwhile, the cost to PG&E customers to obtain a license renewal has routinely exceeded \$20 million per license, and some current proceedings will exceed \$50 million. When, and if, a license is approved and received, implementing the conditions of the license also routinely costs tens-of-millions of additional dollars.

To put this into greater perspective, the cost and duration of the process to re-license an *existing* hydroelectric project can be just as cumbersome and complex as seeking a license for a new, unbuilt hydroelectric project. In both cases, the cost and duration associated with licensing is typically far greater than any other established electric generation technology.

LICENSING IMPROVEMENTS FOR HYDROPOWER

PG&E appreciates and recognizes the right of and need for Federal agencies to place license conditions upon the lands they manage. Similarly, PG&E also appreciates and recognizes the right of Federal agencies to prescribe fishways to allow fish to pass licensed dams. Finally, PG&E recognizes and appreciates that different Federal agencies have different missions and may therefore have different perspectives on what license conditions are needed. At the same time, we also believe that better coordination of these perspectives is necessary.

The common sense and fair recommendations we advocate to modernize the process will: (1) help improve the timeliness and reduce the cost of renewing a license; (2) ensure all involved agencies use the same underlying data, studies and schedule in exercising their authorities; (3) provide clarity with respect to the extent of agencies' authorities; and (4) provide a process for a single effective challenge opportunity before the Federal Energy Regulatory Commission (FERC) to resolve disputes regarding proposed license conditions.

In addition, none of the above-mentioned recommendations would repeal or undercut the authority of any Federal or state resource agency or the Native American community to administer the Endangered Species Act, Clean Water Act, or other Federal environmental laws pertaining to hydropower. And since these measures will encourage an open and collaborative approach with stakeholders, we will achieve better outcomes by working together throughout the licensing and re-licensing processes—and hopefully be in a position to effectuate necessary upgrades and improvements more quickly.

To overcome the existing licensing inefficiencies, while maximizing hydropower's potential and promoting additional transparency, Congress should focus on addressing the following four areas:

- Improving coordination between Federal and state environmental reviews;
- Better defining the extent of authorities by Federal agencies;
- Improving Federal agency coordination and transparency; and
- Improving Federal and state agency coordination and transparency.

To achieve these basic improvements, we are hopeful Congress will pass meaningful hydropower licensing process reforms based on the following six principles:

- Establishing a defined process at FERC to resolve issues arising from overlapping or conflicting authorities, or overlapping and conflicting license conditions among Federal agencies, as well as between Federal and state agencies.
- Addressing deficiencies in the licensing process that prohibit a licensee from challenging final conditions or prescriptions.
- Requiring the use of the same studies and data for both Federal and state environmental analyses, including defining a disciplined schedule to which all agencies and stakeholders must adhere to.
- Clarifying that the conditioning authority of Federal land management agencies should be only on Federal or private lands within the project boundary or directly related to the project.
- Empowering FERC to be in a position not to adopt proposed license conditions that do not have a clear nexus with the project being licensed or any actual effect on the Federal reservation that is being used.
- Allowing FERC to establish a schedule with respect to all Federal authorizations, while considering late filed mandatory conditions and prescriptions as recommendations under Federal Power Act Section 10(a).

In addition to implementing these principles, we recommend the Natural Resources Committee—given its jurisdiction over the Federal resource agencies involved in the licensing of hydropower facilities—continue its work to identify criteria that result in sensible mandatory conditions all agencies can embrace. While PG&E generally has had success in working with Federal and state resource agencies and others to develop collaborative solutions, the fact remains that some can be narrowly focused on a single resource or unwilling to consider all of the impacts of their mandatory conditions, including impacts on the economy, the environment and electric reliability. We believe that a bipartisan solution can be reached to address these matters.

PG&E believes these common sense, much-needed improvements to the hydropower licensing process can be accomplished in a responsible and balanced manner that protects and preserves our fisheries and other natural resources, and provides for continued collaboration.

At the same time, such enhancements would bring consistency, predictability and lower costs for projects that support the safe and reliable delivery of hydroelectric power—benefiting utility customers, the environment, American jobs, and energy infrastructure. For example, a license renewal typically results in enhanced habitat and species protections, more access to recreational areas and updated water resource measures. These are improvements that all stakeholders want, but unfortunately they often take too long to put in place because of the length of the relicensing process. A more timely process will continue to provide for these benefits, while also ensuring that they are achieved sooner and at lower cost to energy consumers.

We know that Congress has an important opportunity to modernize the hydropower licensing processes in 2016 and beyond. PG&E looks forward to continuing our efforts—and working with Congress to further advance these long over-due measures—as we strive to operate the safest, cleanest and most reliable hydroelectric system in the Nation.

Thank you for the opportunity to testify.

QUESTIONS SUBMITTED FOR THE RECORD BY REP. HUFFMAN TO MS. DEBBIE POWELL
OF PACIFIC GAS AND ELECTRIC COMPANY

Ms. Powell did not submit responses to the Committee by the appropriate deadline for inclusion in the printed record.

Question 1. Hydropower is one of several renewable, non-fossil fuel energy sources, but the construction and maintenance of dams can bring with it several negative environmental impacts, not only to fish and wildlife but through greenhouse gas emissions as well. These impacts include:

- The emission of methane from reservoir surfaces, turbines and spillways,

- Submerging and destroying large areas of carbon capturing forests and grasslands,
- Blocking the flow of critically needed sediment to feed starved coastal wetlands and beaches at risk from sea level rise,
- Impeding wildlife migration routes essential for climate adaptation, and
- Exacerbating the negative climate impacts on water quality, stream flows, and water loss due to reservoir evaporation.

How does the Pacific Gas and Electric Company address these broader issues related to species viability, methane emissions, sediment loads, and reservoir evaporation?

Dr. GOSAR. Perfectly timed. Thank you very much, Ms. Powell. I now recognize Mr. Denham to introduce his witness, Mr. Boyd.

Mr. DENHAM. Thank you, Mr. Chairman. It is my honor to introduce a good friend, Steve Boyd, Director of Water Resources and Regulatory Affairs at Turlock Irrigation District, the cleanest energy available, the cleanest energy out there. This water energy is not relatively clean, not kind of clean, but the cleanest. I understand there is a political agenda behind this as well, on why we do not want to have more water storage, but I just want to commend you on having the cleanest energy available out there.

I know that you are going through a lot of challenges with the permitting process. A number of government regulations, while some would say they are lax policy permitting, I know that it has taken you over 7 years, it will probably take you another 7 years to a decade longer to actually finish this permitting process that will go well beyond our local budgets. I mean we are already over \$20 million; I am sure it will be much, much more than that on this long, lengthy process.

Nevertheless, you are providing power to our community, 203 megawatts through the Don Pedro Dam alone. It is something that is critical to our community, critical to the Valley, not only with the amount of electricity you are providing, but certainly with the amount of water storage and irrigation. Without this irrigation, the social injustice that continues to see our high unemployment level, to see large swaths of our community that are unemployed and in bread lines would continue to increase.

So, we thank you for the work that you do. We thank you for the work that is upcoming. Greater water storage not only creates greater clean energy, but certainly creates the bounty of fresh fruits and vegetables that we provide the rest of the world and creates much-needed jobs in our community, as well.

We welcome you to today's hearing, and we look forward to hearing more about the transparency, the accountability, and particularly some of the challenges that you are going through with Federal and state agencies.

STATEMENT OF STEVE BOYD, DIRECTOR OF WATER RESOURCES AND REGULATORY AFFAIRS, TURLOCK IRRIGATION DISTRICT, TURLOCK, CALIFORNIA

Mr. BOYD. Thank you, Congressman Denham, for that very kind introduction. Vice Chair Gosar, Ranking Member Huffman, members of the subcommittee, my name is Steve Boyd with the Turlock

Irrigation District. I am the Director of Water Resources and Regulatory Affairs.

Following the introduction, I want to focus my comments on our recent experience with re-licensing the Don Pedro Project. First, a little background. For those of you not familiar with California, we are about 90 miles due east of San Francisco. The project is on the Tuolumne River, a tributary to the San Joaquin River. The headwaters begin in Yosemite National Park. They flow west across the Valley into the San Joaquin, and then north into the San Francisco Bay Delta.

Turlock Irrigation District was founded in 1887. We are the oldest irrigation district in the state and one of four today that also provides retail electricity to our consumers. Shortly after TID was formed, the Modesto Irrigation District was formed to our north, across the Tuolumne River from us and immediately adjacent to it, and the districts immediately began developing water rights, some of the oldest in the state, on the Tuolumne River, with the notion of bringing irrigation to some of the richest farm lands in the world.

In the 1900s, the two districts began diverting water from the Tuolumne River, but it was apparent, without a reliable and safe water supply, we could not complete even a single irrigation season. So we constructed in the 1920s the original Don Pedro Project, capable of holding 289,000 feet. And we also entered the retail electric business at that time.

With a small reservoir, we were able to get through one irrigation season. But for those of you familiar with hydrology in California, with back to back dry years we were unable to weather sustained drought, much like we are seeing now. So in 1971, the districts completed the new Don Pedro Project, a 570-foot-tall dam capable of impounding about 2.3 million acre-feet of water, about 10 times the size of the original project, and generating 203 megawatts of power.

The original license was issued in 1966, and it carried a 50-year term. Interestingly, that license is set to expire this Saturday. In anticipation of the expiration of that license, the districts began in earnest the re-licensing process in 2009. Using what FERC calls the Integrated Licensing Process, or ILP, we began a series of meetings with interested stakeholders.

The ILP is intended to create clear time frames, a project schedule, and provide ample opportunity for agencies, NGOs, and interested parties to provide input on studies, data gaps, and to help inform the record for the FERC process.

Since the 7 years that we began the process, our ratepayers have spent over \$20 million on the EILP, most of those costs associated with over 30 complex studies that are intended to show Don Pedro's impacts on a variety of resources. Those resources include historic properties, Native American cultural sites, recreation, state and federally protected species, water temperature and quality, resident and anadromous fish populations, both in the reservoir and below.

All of those studies were developed in consultation and collaboration with multiple state and Federal agencies, NGOs, and, in our case, a myriad of interested individuals. We have held more than

a dozen public workshops since 2013 on those studies. And, frankly, most of the agencies have not attended many of those and been a part of the process. It is my firm belief that the study results create the road map for success and licensing conditions going forward.

Don Pedro is multiple-benefit facility. Aside from the 20 percent annual production of our overall load, it is our most economical source and carbon-free source of energy.

Seeing my time, I am going to jump right to the conclusion. In closing, the district takes their role of environmental stewardship very seriously. We are held correctly to a high standard of accountability and transparency in this process, and we believe that agencies with Section 4(e) and Section 18 mandatory conditioning should be held to that same level of accountability.

We believe there is a win-win in this process, and that we do not need to do away with mandatory conditioning, but simply bring about engagement in the process from the beginning. Thank you. [The prepared statement of Mr. Boyd follows:]

PREPARED STATEMENT OF STEVE BOYD, DIRECTOR OF WATER RESOURCES AND
REGULATORY AFFAIRS, TURLOCK IRRIGATION DISTRICT

HIGHLIGHTS

1. Hydropower is of great value to our region. It serves multiple benefits, including irrigation, balancing for interment renewable resources, recreation, promoting electric reliability, is a clean emissions-free resource and is an economic stimulus to our farming community.
2. FERC's Integrated Licensing Process (ILP) is only beneficial if participants are willing to faithfully engage.
3. Mandatory Conditioning Agencies must give equal consideration to power and non-power benefits as directed by current law; the river provides so much more than power to the region.
4. The process could be improved if there was more transparency and timely engagement by the resource agencies in the effort to find science-based solutions to meet the multi-purpose nature of the resources and the dam.
5. Last, for those that want to do the right thing and are concerned about the integrity of the river, delays in licensing ultimately also lead to delays in environmental benefits.

THE FOUNDATION

Established in 1887, the Turlock Irrigation District (TID) was the first publicly owned irrigation district in the state of California and is one of only four irrigation districts in the state providing electric retail energy directly to homes, farms and businesses. Organized under the Wright Act, the District operates under the provisions of the California Water Code as a special district and is governed by a locally elected, five-member Board of Directors.

Today, TID provides irrigation water to more than 5,800 growers in a 307 square-mile service area that incorporates 150,000 acres of Central Valley farmland. In addition, TID provides reliable electricity to a growing retail customer base that now exceeds 100,000 residential, farm, commercial, industrial and municipal accounts in an electric service area that encompasses 662 square-miles in portions of three counties.

TID has been delivering irrigation water since 1900 when the District completed 250 miles of its gravity-fed water conveyance system. The Tuolumne River is the District's primary source of water, replenished annually by the spring snowmelt in the 1,884-square-mile Tuolumne River watershed originating at Mt. Lyell in Yosemite National Park. Water for irrigation and hydroelectric power production is stored at the Don Pedro Reservoir about 50 miles east of Turlock in the Sierra Nevada foothills near the historic gold rush era town of La Grange.

TID partnered with the neighboring Modesto Irrigation District (MID) (“the Districts”), and built La Grange Dam in 1893 to divert water out of the river and into the Districts’ respective canals. The Districts joined forces again in the 1920s to build the first Don Pedro Dam. With a small storage capacity of 289,000 acre-feet, the dam held only enough water to accommodate growers’ irrigation needs for a single growing season. After numerous dry winters, the Districts, which included our community, made the decision to replace the original dam with a much larger one in order to store water necessary to bridge multiple years of drought. The New Don Pedro Project was completed in 1971 and has storage capacity of 2,030,000 acre-feet (AF), seven times larger than the original.

With the first dam came the opportunity to generate hydropower. The Districts’ customers voted overwhelmingly in 1923 to keep the power for public use versus selling it to investor-owned utilities then operating in the area, thus becoming the first of the state’s irrigation districts to also enter the retail power business.

BENEFITS OF THE DON PEDRO PROJECT

The Don Pedro Project was locally funded and built, and it is operated by the Districts. It was constructed primarily to store and deliver irrigation water to some of the most productive farmland in the world. According to the Socioeconomic Study Report completed in April 2014, the Don Pedro Project supports approximately \$4.109 billion in output, \$734.8 million in labor income and 18,900 jobs annually. Additionally, the value of the crops produced within the TID service area is approximately \$359.3 million per year. These numbers reflect the positive direct and indirect economic effects on the entire regional economy within Stanislaus, Merced and Tuolumne counties.

With affordable, reliable irrigation water supplies, the Project directly supports the vibrant agricultural sector that has evolved since the Districts’ formation. And by extension, it indirectly supports the large agriculturally based economy that has developed around crop and dairy farm production, including input suppliers, dairy plants, food processing businesses, and many others. In addition to providing irrigation water to some 150,000 acres, the Don Pedro project also provides municipal and industrial water supply, flood control storage, recreation, power, and fish and wildlife conservation benefits.

Securing a new FERC license is not only crucial to providing water for California’s Central Valley, it would maintain a clean and sustainable energy supply that is a fundamental component of the Districts’ long-term effort to meet California’s aggressive greenhouse gas reduction goals and to fulfill other energy and environmental mandates.

On average, Don Pedro provides 20 percent of TID’s annual electric load, but during a wet year, this can be as high as 35 percent. Moreover, Don Pedro is our most economical energy source and, because of its operating flexibility, is a critical resource for meeting demand and stabilizing the regional grid. In addition to the hydropower generated by the Don Pedro Project, TID meets the needs of their electric power customers with a variety of generation, including wind, solar and natural gas.

Operational flexibility is paramount as TID, and California’s entire utility sector, moves toward the newly adopted 50-percent Renewable Energy Standard (RPS) and a massive influx of intermittent renewables on the regional grid. Because TID serves as its own balancing authority—one of seven in the state—its portfolio must include sufficient resources to meet its reliability and safety obligations. As a balancing authority, we not only help provide reliability to the Valley, we also help the Western region in its balancing and electric reliability needs.

This benefit cannot be understated as we move to one of the most aggressive renewable standards in the country. Although large hydroelectric systems are not included within California’s regulatory definition of eligible renewable energy to meet the 50 percent RPS, Don Pedro’s generation emits no greenhouse gases, helping TID limit our carbon footprint overall. The Central Valley has some of the lowest levels of air-quality in the state. Hydroelectricity produced from the Don Pedro Project continues to ensure that TID is able to provide reliable electricity with no carbon emissions.

The multiple benefits of the Don Pedro Project continue to help maintain economic stability for our customers. This is extremely important as the District represents some of California’s most economically challenged areas. Approximately 53 percent of the residents within TID’s service area live within a disadvantaged community, as defined by the California Environmental Protection Agency.

THE RE-LICENSING PROCESS

TID and MID are co-owners and licensees of the Don Pedro Project on the Tuolumne River. The Project consists the 2,030,000 AF reservoir and a powerhouse capable of generating 203 megawatts. The Federal Energy Regulatory Commission (FERC) issued the Districts a license for the Don Pedro Project in 1966, and that license expires on April 30, 2016. Since 2009, the Districts have been working toward acquiring a new license within FERC's Integrated License Process (ILP). Following extensive consultation with resource agencies, tribes, and multiple conservation groups, as well as the FERC, the Districts filed a draft license application on November 26, 2013, and a final license application with FERC on April 28, 2014.

To date, the Districts have spent 7 years and more than \$20 million on the FERC re-licensing process for the Don Pedro Project. The Districts expect to spend several more years and millions more in the expectation of a new license that will allow MID and TID to continue to cost-effectively operate, in an environmentally sound manner, the very same hydropower facility that they have been operating for the last 45 years. As public agencies, the costs associated with the re-licensing process and meeting any additional conditions imposed by a new license will be borne by the communities MID and TID serve.

The Districts intentionally chose to enter into the FERC ILP desiring to work alongside the state and Federal agencies and other interested parties and stakeholders—at the beginning of the process—working toward an equitable solution for the operations of the Don Pedro Project. The Districts had hoped that this process would produce a solution in a reasonable time frame, allowing the Districts to begin to implement fisheries improvements agreed to by all parties.

The Districts followed the FERC ILP, which provided a clear schedule and timeline for the re-licensing process and created fair and ample time for the involvement and participation of Non-Governmental Organizations (NGOs), state and Federal agencies as well as interested parties to be involved providing input and creating a clear and complete record.

As part of this process, the Districts have completed more than 33 studies, costing a cost of \$20 million to date, with some individual studies exceeding \$1 million. These studies examine, among other items, the Don Pedro Project's potential effects on historic properties, Native American cultural sites, public recreation, federally protected species, state protected species, water quality, water temperature, instream flow, resident and anadromous fish populations both in the reservoir and downstream of the project, terrestrial species and regional socioeconomic resources.

Each of these 33 studies was developed by the Districts in consultation with multiple Federal and state agencies, numerous interest groups during countless meetings and conference calls, which in combination generated thousands of pages of information and comments. In addition, the Districts have held more than a dozen public workshops on the studies and their findings since 2013. After each study was performed, a draft report was shared with all the participants in the re-licensing process to provide an additional opportunity for review and comment. The Districts then responded to every comment, modified the draft report and issued a final report.

As the final studies are completed and submitted, the Districts will be filing an amended Final License Application with FERC based on the complete data set and record. In the meantime, the Districts have been meeting with NGOs, resource agencies and all interested parties in the hopes of reaching agreement on flow and non-flow measures that could be made to ensure the integrity of the river and secure a new license. These measures will bring about significant improvements to the fishery sooner, rather than later; but only if all parties are willing to negotiate rather than drag out the regulatory process.

IMPROVING THE RE-LICENSING PROCESS

The great amount of care, time and money committed by the Districts and the scientists and engineers performing rigorous studies using accepted methods vetted by all the re-licensing participants would be most useful if study results are used by the participants to inform their opinions and the recommended terms and conditions that they want FERC to impose on the new license.

However, in our case, these carefully executed studies have often been ignored or criticized as faulty when the results do not confirm participants' pre-conceived notions or beliefs about environmental impacts. Fortunately, objectivity has not been lost with FERC staff, which gives every indication of being impartial reviewers who use and reference all of the resulting studies, and who do not seem to have pre-conceived notions about project impacts.

For example, the Districts 2012 predation study, a FERC-required study, evaluated the impact of predation by non-native fish on salmon in the lower Tuolumne River. The study determined that more than 90 percent of the out-migrating salmon smolts were consumed by non-native bass species prior to reaching the San Joaquin River. Some re-licensing participants and resource agencies criticized the study and requested an additional predation study. The Districts collaborated with re-licensing participants and agreed on the new Predation Study Plan, and FERC ordered a second predation study in 2014, which will cost well over \$1 million to be conducted. The Districts requested a permit from California Department of Fish and Wildlife in October 2013, yet the permit for the FERC-ordered study was never issued by the agency, meaning the 2012 study will be the study of record.

The Districts take their role of environmental stewardship seriously and are rightfully held to a high degree of accountability and transparency with all re-licensing participants. We believe that all re-licensing participants should be held to that same standard, especially agencies with mandatory conditioning authority under Section 4(e) and Section 18 of the Federal Power Act. We believe the record and the results of Tuolumne River-specific data should be the basis for decisions related to future license conditions. If mandatory conditioning agencies make decisions related to license conditions, it is incumbent upon them to provide logical and substantial support for their rationale, and make said information available to all participants.

That is not always the case. For example,

On June 10, 2011 the National Marine Fishery Service (NMFS) communicated in a letter to FERC:

“Given that fall-run Chinook salmon, CV steelhead, and Pacific lamprey are present in the lower Tuolumne River, it is reasonable that NMFS may exercise (through the Secretary of Commerce) its section 18 fishway prescriptive authority . . .”

NMFS’s letter clearly signaled its intent to require fish passage at Don Pedro prior to the completion of any studies on the Tuolumne River below or upstream of Don Pedro Dam documenting the existence of any of the environmental conditions necessary to support the various life cycles of the species mentioned by FERC in its letter. Retrofitting a fish passage on to the 570 feet high Don Pedro would be very expensive to the Districts’ ratepayers. Before mandating such an undertaking, NMFS should be required to justify its decision with proof that it will actually benefit the resources and the fish passage is the best available option, not merely the one NMFS likes the best.

IN CLOSING

The Districts believe that the study results and record from the Don Pedro process indicate that there are a series of flow and non-flow mitigation measures that, if implemented, would dramatically increase the health and viability of the fishery on the Tuolumne River. Those measures could be negotiated and settled upon by all interested parties and then taken to FERC jointly as a set of future license conditions. Many of the agencies are not motivated to seek creative solutions that could bring about significant environmental improvements sooner rather than much later, but choose instead to wait and use their regulatory authority at the end of the process, delaying environmental improvements as well requiring conditions not supported by data.

The Districts want to do the right thing for our community, and the environment, and we think it is fair to want those actions to be based on science and the multiple studies we have conducted based on a collaborative process by all stakeholder. However, what we have found is no desire or incentive for certain resource agencies to engage in a meaningful way, throughout the process, waiting until the end when they have more bargaining power. We believe, when it comes to mandatory conditioning authority, there are no checks in the systems and improvements are needed.

In closing, Don Pedro is an emissions-free resource, providing resilience toward multiple global challenges such as climate change, drought, and water storage, flows for fish, irrigation, and other ancillary uses. TID encourages a more efficient and transparent process, recognizing both power and non-power benefits of Don Pedro. Significant hydropower licensing improvements would perhaps shield future license applicants from the same regulatory dilemma the Districts are currently facing.

Thank you.

QUESTIONS SUBMITTED FOR THE RECORD BY REP. HUFFMAN TO STEVE BOYD,
TURLOCK IRRIGATION DISTRICT

Mr. Boyd did not submit responses to the Committee by the appropriate deadline for inclusion in the printed record.

Question 1. Hydropower is one of several renewable, non-fossil fuel energy sources, but the construction and maintenance of dams can bring with it several negative environmental impacts, not only to fish and wildlife but through greenhouse gas emissions as well. These impacts include:

- The emission of methane from reservoir surfaces, turbines and spillways,
- Submerging and destroying large areas of carbon capturing forests and grasslands,
- Blocking the flow of critically needed sediment to feed starved coastal wetlands and beaches at risk from sea level rise,
- Impeding wildlife migration routes essential for climate adaptation, and
- Exacerbating the negative climate impacts on water quality, stream flows, and water loss due to reservoir evaporation.

How does the Turlock Irrigation District address these broader issues related to species viability, methane emissions, sediment loads, and reservoir evaporation?

Dr. GOSAR. Well, I thank you very much.

That was wonderfully done. Everyone is staying under 5 minutes. I now recognize Ms. Pavel.

STATEMENT OF MARY PAVEL, ATTORNEY, SONOSKY, CHAMBERS, SACHSE, ENDRESON & PERRY, LLP, WASHINGTON, DC

Ms. PAVEL. Good afternoon, Mr. Chairman and members of the committee. My name is Mary Pavel. I am an attorney for the Skokomish Indian Tribe and a member of the tribe.

Since time immemorial, the Skokomish Indian Tribe has occupied and controlled lands adjacent to the Skokomish River. In 1855, the Skokomish Tribe entered into a treaty with the U.S. Government, which reserved a permanent homeland for the Skokomish along the Skokomish River. The location of the reservation was intended to facilitate easy access to the river and its tributaries that are vital to the tribe's fish-dependent lifestyle and culture.

The focus of my testimony today is Section 4(e) and the importance of this provision in protecting the resources that are vital to tribes.

The Skokomish Tribe's experience with the Federal Power Act represents two extremes of implementation of 4(e): when the Trustee abdicates its responsibility under the Act and when the Trustee embraces its responsibility under the Act.

The Cushman Project became fully operational in 1930. From its inception, the tribe resisted the project because of its impact on the reservation and treaty rights. However, the Federal Government did nothing to protect the tribe or its reservation. As constructed, Cushman includes two dams, two powerhouses, penstocks, a pipeline, and transmission lines. Most of the project's structure lies just northwest of the Skokomish Reservation, but the powerhouse and transmission lines are within the reservation, with some of the transmission lines being located on trust property.

The two dams totally block fish passage up the North Fork of the Skokomish River. Further, the entire flow of the North Fork of the Skokomish River was diverted from its channel and sent by pipeline to an out-of-basin powerhouse on the Hood Canal. This resulted in the destruction of the once premier and valuable Skokomish North Fork fishery, including the extirpation of the Skokomish River sockeye; the flooding of almost 30 percent of the Skokomish Reservation, including the destruction of the drinking water, because the flooding destroyed the function of septic systems; and the destruction of treaty-protected cultural and wildlife resources.

Given the failure of the United States to uphold its responsibility under the Federal Power Act, the tribe had to wait until relicensing in 1974. There was a great deal of time between when Tacoma filed its license and when FERC issued its new license, but that was not the land management agency's fault. In fact, Tacoma benefited from that process. Ultimately, what Tacoma got was not a 50-year license, but an 86-year license, because the annual licenses contained no new conditions.

The tribe used its time actively to push Interior to move forward with 4(e) conditions. The Interior did put forward 4(e) conditions, however FERC rejected Interior's conditions, asserting that Interior had missed FERC's 60-day deadline. Further, notwithstanding the well-documented adverse impact of the project on their reservation, FERC took the position that Interior only had the authority to impose conditions on the transmission lines on trust lands.

Both the tribe and the city filed petitions to review the Cushman license. In this case it was the tribe who defended Interior's authority to impose 4(e) conditions, not the Federal agency itself. Again, the Trustee abdicated its trust responsibility.

In this landmark case, the court held that FERC must include Interior's 4(e) conditions in any license it issued for the project. This legal victory for the tribe created an opportunity for the tribe, Tacoma, and the Federal and state agencies to reach a global settlement for the future operation of Cushman. The benefits of the settlement included increased carrying capacity of the Skokomish River; improved fish habitat; improved fish passage; restoration of salmon populations, including two hatcheries to reintroduce them into the North Fork; restoration of wildlife habitat; and restoration of lands and cultural sites to the tribe.

There can be no doubt that this settlement only happened because Interior's authority to impose 4(e) conditions was upheld by the court.

While hydropower may be carbon free and renewable, policy-makers must consider that hydropower development can have devastating and, in some cases, irreversible impact on people and resources. The Skokomish Tribe bore the brunt of the cost of generating power at Cushman for 86 years. Today, unlike the 1920s, the land management agencies better recognize the responsibility to balance the interest of energy development against the responsibility to protect the lands and resources that are a part of the public trust. The balance that is required by 4(e) is necessary for the United States to fulfill its solemn trust responsibility to tribes to protect our homeland and our resources.

Thank you for the opportunity to testify.
[The prepared statement of Ms. Pavel follows:]

PREPARED STATEMENT OF MARY J. PAVEL, PARTNER—SONOSKY, CHAMBERS, SACHSE,
ENDRESON & PERRY, LLP

Mr. Chairman and members of the committee, thank you for the opportunity to testify today. My name is Mary Pavel. I am currently a partner in the law firm of Sonosky, Chambers, Sachse, Endreson & Perry, LLP. I previously served as the Chief Counsel and Staff Director for the Senate Committee on Indian Affairs. I am an attorney for the Skokomish Indian Tribe and a member of the tribe.

A. THE SKOKOMISH RESERVATION

Since time immemorial, the people of the Skokomish Indian Tribe occupied and controlled lands adjacent to the Skokomish River and Hood Canal on the Olympic Peninsula of Washington State. In 1855, the Skokomish Indian Tribe entered into a treaty with the U.S. Government, which reserved a permanent homeland for the Skokomish people near their ancestral villages along the Skokomish River at the southernmost point of Hood Canal. *See Treaty of Point No Point, January 26, 1855, 12 Stat. 933, reprinted in II C. Kappler, Indian Affairs, Laws and Treaties at 674–77; see also U.S. v. Washington, 384 F. Supp. 312 (W.D. Wash. 1974) (Boldt).*

The location of the Reservation was intended to facilitate easy access to the Skokomish River, its tributaries, and the tidelands and salt water of Hood Canal that sustained the Skokomish people for generations. *Id.* at 376–77. The Reservation's location near the Skokomish River and the waters of Hood Canal supported the fish dependent lifestyle and culture of the Tribe. In 1905, the U.S. Supreme Court correctly acknowledged that for Pacific Northwest Indian tribes, fishing and hunting resources “were not much less necessary to the existence of the Indians than the atmosphere they breathed.” *United States v. Winans*, 198 U.S. 371 (1905).

The treaty with the United States also reserved to the Skokomish people “the right of taking fish at usual and accustomed grounds and stations . . .” as well as hunting rights “on open and unclaimed land.” *Boldt*, 384 F. Supp. at 376–77. The Skokomish people relied and continue to rely on natural resources of the Skokomish River for subsistence, economy, ceremonial, cultural, religious, and other purposes. *Id.* Many tribal members derive all or a part of their income from the fish and shellfish of the Skokomish River system.

B. SECTION 4(E) OF THE FEDERAL POWER ACT

The focus of the Tribe's testimony today is the Section 4(e) of the Federal Power Act and the importance of this provision in protecting the resources that are vital to the Skokomish Tribe. In one scholarly article, it is said, “the Federal Power was premised on the principle that electric power potential of the Nation's navigable waterways is a public resource, which should be harnessed in a manner consistent with the public interest.” Kirsch, Peter J. and Sietz, J. Barton, “The Role of the Federal Energy Regulatory Commission in Protecting Non-Consumptive Water Uses” (1990) presented at *Moving the West's Water to New Uses: Winners and Losers* (Summer Conference, June 6–8)) at <http://scholar.law.colorado.edu/moving-west-water-to-new-uses/13/>. Section 4(e) of the Federal Power Act is the tool that ensures that when this development happens it is consistent with the purposes of other Federal lands and most importantly, for the purposes of this testimony, Federal Indian reservations. *See Sommerville, Thane D., “Tribes and Dams: Using Section 4(e) of the Federal Power Act to Protect Indian Tribes and Restore Reservation Resources,” Bellwether, Seattle University School of Law* (Spring 2009).

Section 4(e) of the Federal Power Act, even as originally enacted in 1920, authorized the Secretary of the Interior to impose conditions to protect Federal reservations, including Indian Reservations, where projects licensed by the Federal Power Commission were located. *See* 16 U.S.C. § 797(e). This provision continues in force and effect today. More specifically, the Federal Power Act authorized the licensing of hydroelectric power projects within reservations, but only upon an affirmative determination by the Federal Power Commission (now the Federal Energy Regulatory Commission “FERC”) that the license “will not interfere or be inconsistent with the purpose for which such reservation was created or acquired.” 16 U.S.C. § 797(e). In addition, Section 4(e) requires that any license issued within a Reservation shall be subject to and contain such conditions as the Secretary of the Interior shall deem necessary for the adequate protection and utilization of such reservations. *Id.*

The Skokomish Tribe's experience with the Federal Power Act represents the two extremes of implementation of this important provision: when the trustee com-

pletely abdicates its responsibility under the Act and when the trustee ultimately embraces its responsibility under the Act. The Skokomish Tribe's experience with the Federal Power Act further demonstrates the critical importance that Section 4(e) plays in balancing the use of the Nation's waters for the development of hydropower with terms and conditions essential to ensuring that hydropower is not developed at the expense of other vitally important resources.

C. INITIAL LICENSING OF THE CUSHMAN HYDROELECTRIC PROJECT

Since the early 1900s, the city of Tacoma and others recognized the hydropower possibilities for the Skokomish River. The Skokomish Tribe equally recognized the potential devastation that hydropower development would cause the Skokomish Tribe, its people and its resources. These concerns are well documented in correspondence between the Tribe and officials of the highest levels within the Federal Government, including officials within the Department of Justice and the Department of the Interior. These concerns were also expressed to the city of Tacoma.

On November 21, 1923, the city of Tacoma requested a "minor license" from the United States, through the Federal Power Commission (now FERC) for the operation of the Cushman Hydroelectric Project. *Skokomish Indian Tribe v. United States*, 332 F.3d 551, 554 (9th Cir. 2003). Notwithstanding the repeatedly expressed Tribal concerns regarding the impact that hydropower development would have on its treaty protected fishery and its Reservation, Tacoma submitted its license application without any measures for fish passage or any other mitigation to protect the Tribe and its Reservation. See *City of Tacoma's Application to Federal Power Commission for a License to Flood Certain Lands of the United States* (November 21, 1923).¹ Moreover, Tacoma's 1923 application did not inform the Federal Power Commission that the main power plant and a portion of the project transmission line would be on the Skokomish Reservation, or that Tacoma intended to divert and dry up the entirety of the North Fork Skokomish River upstream of the Reservation. *Id.* Nor did the Federal Power Commission conduct any investigation to determine potential impacts to the Skokomish Tribe or the Skokomish Reservation. In 1924, the United States, through the Federal Power Commission, granted the city of Tacoma authorization to flood 8.8 acres of Federal land through a so-called "minor part" license. See *License for A Minor Part of a Complete Project, Project. 460, Washington City of Tacoma, O.C. Merrill, Executive Secretary Federal Power Commission* (June 3, 1924). The license did not authorize the construction, operation, or maintenance of any dams, reservoirs, powerhouses, transmission lines or appurtenances. *Id.* The "minor part" license only authorized activity on less than two-tenths of one percent of the area actually occupied by the present-day Cushman Project. *Skokomish v. United States*, 332 F.3d at 565 (Tashima, J., dissenting).

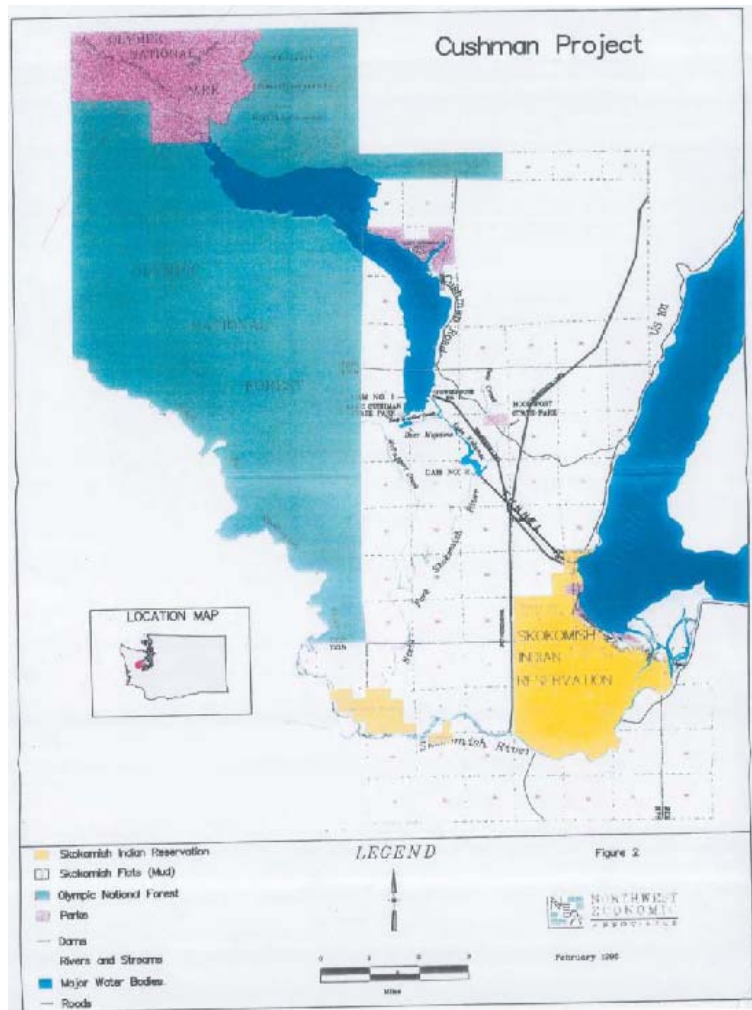
In 1924, the city of Tacoma began construction of the Cushman Hydroelectric facility on the North Fork of the Skokomish River under the 50-year "minor part" license issued by the Federal Power Commission. The Cushman Project became fully operational in 1930. From its inception, the Project was vigorously resisted by the Skokomish Tribe because of its impacts on Reservation lands and treaty fishing rights. The record in the Tribe's case against the city of Tacoma and the United States documents the Tribe's repeated requests to the Interior Department to take action to protect the Skokomish Tribe and its Reservation, and its multiple requests to the Interior and Justice Departments for assistance and litigation in both state and Federal courts. See record of proceedings in *Skokomish Indian Tribe v. United States*, No. C99-5606 (E.D. Wash.). However, the Interior Department did nothing to protect the Tribe or its Reservation, despite Interior's authority (exclusive of the Tribe) under the Federal Power Act to protect the Tribe's Reservation and despite the United States' obligations under the Treaty with the Tribe to protect the rights guaranteed it under that Treaty. See *Federal Power Comm'n v. Tuscarora Indian Nation*, 362 U.S. 99 (1959); *White Mountain Apache Tribe v. United States*, 537 U.S. 465 (2003).

The Cushman Project includes two dams, two powerhouses, penstocks, a pipeline, transmission lines and other structures. *City of Tacoma v. FERC*, 460 F.3d 53, 59 (D.C. Cir. 2006). Most of the Project's structures lie just northwesterly and in close proximity to the Skokomish Indian Reservation. See Map attached as Exhibit A. One powerhouse and the project transmission lines are within the Reservation, with the transmission lines being located on trust property. The two dams totally block fish passage up the North Fork of the Skokomish River. Further, the entire flow

¹Copies of the records of this history are part of the record of proceedings in *Skokomish Indian Tribe v. United States*, No. C99-5606 (E.D. Wash.), and are also maintained in the Tribe's files.

of the North Fork of the Skokomish River was diverted from its channel and sent by pipeline to an out of basin powerhouse on Hood Canal (a bay of the Puget Sound). *City of Tacoma*, 460 F.3d at 59.

EXHIBIT A



Notwithstanding issuance of the license, the Tribe continued to pursue avenues for readress and protection of its treaty rights. Frustrated by the failure of the United States to protect it, the Tribe attempted to seek legal recourse against the development and associated impacts of the Cushman Project on its own. The Tribe was prevented from doing so by the United States. In a petition submitted to the Secretary by letter dated August 17, 1930, the Tribe petitioned the United States to approve legal representation by private attorneys to represent the Tribe against Tacoma. See *Petition to the Secretary of the Interior, Department of Indian Affairs, Washington, DC* by George H. Adams et al (August 17, 1930). On October 10, 1930, the acting Commissioner of Indian Affairs refused the Tribal members' request for legal representation, and reported that "steps that have already been taken by the Department of Justice to protect their interests." See *Letter from Henry Scattergood*

to Nicholson, Superintendent, Taholah Agency (October 10, 1930). There were no such steps.

Meanwhile, on September 13, 1930, tribal members sued in state court to enjoin Tacoma from diverting the North Fork out of its watershed. *See Complaint, Henry R. Allen, et al, Mason County Superior Court* (September 13, 1930). Two days later, tribal members—including my great-grandfather—on behalf of themselves and the Tribe sued in Federal district court to enjoin Tacoma, arguing that the diversion would ruin their salmon fishery, and diminish their treaty fishing rights, thwart a primary purpose of the reservation, and irreparably destroy their principal means of livelihood. *Complaint, Adams v. City of Tacoma*, Case No. 428 (W.D. Wash. 1930). The Federal district court dismissed the Tribe's suit against Tacoma holding that the Tribe could not represent itself and could only be represented by the United States. *Adams v. City of Tacoma*, Case No. 428 (W.D. Wash. 1930).

Following this dismissal, the Tribe was forced to rely solely on the United States as trustee to protect its interests. However, the United States declined to bring suit, or take any other form of action, to protect the Tribe's rights. In 1934, Assistant U.S. Attorney General Harry W. Blair informed U.S. Attorney for Western Washington, Charles J. Dennis that the United States had a right to bring suit for damage to the Skokomish Indians' treaty rights and cited a July 7, 1934 report evidencing significant damage resulting from the diversion of the North Fork Skokomish River. *See Letter from Harry W. Blair Assistant Attorney General to J. Charles Dennis, U.S. Attorney* (September 15, 1934). Assistant Attorney General Blair directed U.S. Attorney Dennis to investigate the matter, determine the extent of damage, and bring legal action if warranted. *Id.*

However, U.S. Attorney Dennis had served as attorney to the city of Tacoma from 1920–1923 and again from 1928–1932. In that capacity, he represented Tacoma in cases relating to the Cushman Project and the damming and diversion of the North Fork. In September 1934, in what is clearly an ethical violation and conflict of interest, U.S. Attorney Dennis recommended against the United States filing suit against Tacoma for the purpose of protecting the Tribe's fishing rights. *See Letter from Charles Dennis, U.S. Attorney to U.S. Attorney General* (September 24, 1934).

In 1935, the Assistant Secretary of the Interior agreed with Tacoma's former attorney's recommendation that no legal action would be taken by the United States on behalf of the Tribe to protect the Tribe's rights against the damming and diversion of the North Fork Skokomish River. *See Letter from Oscar Chapman, ASIA, to U.S. Attorney General*, (October 1, 1935).

D. IMPACT ON THE SKOKOMISH RESERVATION FOR THE TRUSTEE'S FAILURE

As a consequence, Tacoma operated this facility without any “significant license conditions.” *City of Tacoma v. FERC*, 460 F.3d 53, 66 (D.C. Cir. 2006). The failure of Interior to exercise its statutory duty to impose any—let alone “appropriate-license conditions” in 1924 resulted in the destruction of the once plentiful Skokomish North Fork fisheries, the flooding of almost 30 percent of the Skokomish Reservation and the continued degradation of the entire Skokomish Watershed and the destruction of treaty protected cultural and wildlife resources. *Skokomish Indian Tribe v. United States*, 410 F.3d 506, 509–510 (9th Cir. 2005) (*en banc*).

The dewatering of the North Fork completely destroyed the salmon run up what was once a premier Tribal as well as a sports fishery, with grievous economic and cultural consequences for the Tribe. *See City of Tacoma v. FERC*, 460 F.3d 53, 62 (D.C. Cir. 2006); *Skokomish Indian Tribe v. United States*, 410 F.3d 506, 509–510 (9th Cir. 2005) (*en banc*). *See also Washington v. Wash. State Commercial Passenger Fishing Vessel Ass'n*, 443 U.S. 658, 686 (1979) (the Treaty of Point No Point entitles the Tribe an opportunity to harvest up to a maximum of 50 percent of harvestable resources).

In terms of direct impact on the Skokomish Reservation itself, the dewatering of the North Fork resulted in an approximately 40 percent reduction in the flow of the Skokomish River mainstem. The decreased flows in the mainstem greatly contributed to the massive siltation of the River, because it resulted in significant aggradation—which occurs whenever deposits of sediment cause the floor of a river to build up over time because of the absence of flushing flows. This aggradation caused almost one-third of the Reservation lands to be flooded, and resulted in the failure of septic systems, contamination of wells, blocked fish migrations, damaged Reservation orchards and pastures, and the silting over of fisheries and shellfish beaches. *Skokomish v. United States*, 410 F.3d at 509–510; *see also id.* at 521 (Graber, J., dissenting quoting technical analyses opining that dredging the channel could lessen, halt or even reverse the aggradation).

The Department of the Interior's Report to FERC, in connection with the relicensing of the Project, estimates that the aggradation reduced the conveyance capacity of the mainstem from pre-Project levels of 18,000 cfs to approximately 5,000 cfs. Prior to the Project, the Skokomish River flooded approximately once every 1.3 years. Now the River is subject to flooding more than 10 days a year every year. In all, 27 percent of the Tribe's Reservation land is repeatedly flooded and has therefore become useless. When the news shows the pictures of a fish swimming across the road—that is the Skokomish River. *See* Picture of Fish Crossing the Road, Exhibit B.

EXHIBIT B



The Skokomish River estuary was also negatively impacted by the loss of river flow. The Skokomish River estuary is part of the Puget Sound Estuary system, which is classified as an estuary of national significance under the National Estuary Program of the Clean Water Act, 33 U.S.C. § 1330. By impounding and diverting the North Fork Skokomish River out of its watershed, the Cushman Project severely reduced freshwater and nutrient inflow and altered sediment and salinity regimes, with the consequent adverse impact on the biological productivity of the Skokomish River estuary, inter-tidal delta, and Hood Canal. The Washington Department of Fish and Wildlife's Recommendations on Terms and Conditions on the Project's relicensing stated that the Skokomish River Estuary on the Reservation was an excellent shellfish gathering ground for Tribal members. But as a consequence of the Cushman project's operations, the shellfish beds on the Skokomish River Estuary have been greatly reduced in size and productivity. The degradation of the Estuary is a result of both increased siltation and the septic contamination of the Estuary.

Wildlife populations were also severely impacted by the operation of the Cushman Project. The greatest impact has been upon the migratory deer and elk herds that historically wintered in the valley of the North Fork. The two reservoirs created by the Cushman Project inundated important wintering areas. The destruction of these traditional wintering areas has contributed substantially to the declining populations of deer, elk, and other game and non-game wildlife in the vicinity of the project. Finally, the flooding caused by the Project has destroyed numerous tribal historical and cultural sites.

E. THE RE-LICENSING OF THE CUSHMAN PROJECT

Given the failure of the United States to uphold its responsibility under the Federal Power Act to impose any conditions, the Tribe had to wait until the Project came up for licensing again in 1974 to address the impact of this Project on the Tribe and its Reservation.

On November 5, 1974, Tacoma filed its application for a new license. 84 FERC, ¶61,107 (1998). The Tribe intervened 1 year later to ensure that the United States would not once again abdicate its responsibility to the Tribe and sought conditions on the new license that would protect the Skokomish Reservation. *Id.* at 61,536.

As stated in the FERC initial re-license for the Project in 1998: “Commission action on the Cushman Project license application has been delayed by a series of matters, including the lack of prerequisite water quality certification; the enactment of the Electric Consumers Protection Act of 1986; the requirements of special legislation to remove National Park status from a corner of the Project reservoir; disputes over compliance with the National Historical Preservation Act; a 1 year deferral of the deadline for Federal agencies to refer the Commission staff’s Environmental Impact Statement to the Council on Environmental Quality for review of the EIS’s adequacy; and an eleventh-hour Endangered Species Act issue.” *Id.*

Thus, there was a great deal of time between when Tacoma filed for a license and when FERC issued its initial new license in 1998. But the fault was not that of the land management agencies and their 4(e) conditions. Moreover, the delay in relicensing only benefited Tacoma. From the time the license expired in 1974 until a renewal license was ultimately issued, Tacoma was able to operate the Cushman Dam as it had been operated since 1930. *City of Tacoma*, 460 F.3d at 60. Essentially, what Tacoma received was not a 50-year license, but an 86-year license to operate the project wholly free from all terms or conditions that might otherwise protect the environment, natural resources, or the Skokomish Tribe’s Reservation and Treaty rights. *Id.* at 61.

While the license was pending renewal, the Tribe used this time to knock on every door of the Federal Government to ensure that the Federal Government did not once again ignore its responsibility to the Tribe. In doing so, the Tribe actively pushed Interior to move forward with 4(e) conditions that would protect the Reservation and the Treaty protected resources. The Tribe did this because Interior is the only Agency that can impose 4(e) conditions to protect Indian Reservations. Thus, it was imperative that the Tribe convince Interior to impose 4(e) conditions.

Ultimately, the conditions that Interior put forward were far less than what the Tribe wanted or believed were necessary, but at least the trustee finally acted. *See* Letter from Willie R. Taylor, Director, Office of Environmental Policy and Compliance, Department of the Interior, to Lois D. Cashell, Secretary FERC, Re Cushman Hydroelectric Project, Project No. 460, forwarding DOI section 4(e) conditions for the adequate protection and utilization of the Skokomish Indian Reservation (August 4, 1997). Despite this, FERC rejected Interior conditions, asserting that Interior had missed FERC’s unilaterally imposed 60-day deadline. *See* 84 FERC ¶61,549. Further, notwithstanding the well-documented adverse impacts that this Project had on the Skokomish Reservation, FERC took the position that Interior only had the authority to impose conditions on a discrete and very small portion of the Project, namely that being the transmission line right-of-way located on the Reservation. *Id.*

Both the Tribe and City filed petitions to review the Cushman Project license in the U.S. Court of Appeals for the D.C. Circuit Court. In this case, it was the Tribe who defended Interior’s authority to impose 4(e) conditions, not the Federal agency itself. Once again, our trustee abdicated its responsibility. *See City of Tacoma*, 460 F.3d.53 (D.C. Cir. 2006).

In this landmark case, the D.C. Circuit held that FERC must include the Interior Department’s Section 4(e) conditions in any license it issues for the Project. *City of Tacoma v. FERC*, 460 F.3d 53, 64–67 (D.C. Cir. 2006). The Court of Appeals held that FERC “exceeded its statutory authority by placing a strict time restriction on responsibilities Congress delegated other Federal Agencies.” *Id.* at 65 (“FERC took all the time it needed—a full 24 years . . . Interior, in contrast, produced its license conditions within about 3 years.”).

The Court of Appeals also rejected FERC’s argument that the Secretary’s Section 4(e) conditions must be limited to the impacts of the Project facilities actually located on reservation lands. Relying on the Supreme Court’s decision in *Escondido Mut. Water Co. v. LaJolla Band of Mission Indians*, 466 U.S. 765 (1984), the Court concluded instead that since some of the Project facilities are located on reservation land, the Secretary may impose any “conditions that are designed to mitigate the effect of the project on the Skokomish River to the extent doing so is reasonably related to protecting the reservation and the Tribe.” *City of Tacoma*, 460 F.3d at 67. The Court then remanded the case for further proceedings, leaving open the opportunities for: (1) FERC to “express its disagreement” with the conditions and seek to persuade Interior to modify them; (2) FERC to deny a license; and (3) the City to litigate the reasonableness of the conditions. *Id.*

This legal victory for the Tribe, the first consequential decision since the Tribe began its fight against this Project, created an opportunity for the Tribe, Tacoma,

the Federal Government and the state agencies to reach a global settlement for the future operation of Cushman Project, including Interior's 4(e) conditions. The global Settlement Agreement was signed by the parties in January 2009 and FERC issued a new 40-year license to Tacoma in July 2010.

Today, the Tribe, Tacoma, the state and the Federal agencies are true partners in the hydropower operations on the Skokomish River. The benefits of the Settlement Agreement and new license, included increased carrying capacity on the Skokomish River, improved fish habitat, improved fish passage, restoration of salmon populations, including two hatcheries to reintroduce salmon to the North Fork; restoration of wildlife habitat, and restoration lands and cultural sites to the Tribe. *See Cushman Hydroelectric Project Settlement Agreement Highlights, Tacoma Power, TPU, Exhibit C.*

EXHIBIT C

Cushman Hydroelectric Project Settlement Agreement
Highlights

| | |
|---|---|
| <p>Instream flows</p> <ul style="list-style-type: none"> • Annual water budget that mimics natural flows • Channel forming and sediment transport flows based on real-time conditions • Annual water budget evaluation by the Skokomish Tribe, Tacoma, federal and state agencies <p>Mainstem Skokomish River flood reduction</p> <ul style="list-style-type: none"> • Physical improvements to mainstem Skokomish River channel capacity • Sediment transport flows will address mainstem flooding conditions <p>Fish habitat</p> <ul style="list-style-type: none"> • Improved instream flows will support salmon spawning, rearing, migration and improve water quality • Ramping rates will minimize potential fry stranding • Habitat enhancement and restoration will improve salmonid habitat and remove passage barriers • Monitoring and evaluation of habitat and operational improvements • Protection of threatened and endangered species | <p>Fish passage</p> <ul style="list-style-type: none"> • Downstream fish passage for juvenile salmonids • Upstream passage of adult salmonids • Evaluation of fish passage system will ensure safe, timely and effective passage <p>Restoration of anadromous fish populations to upper North Fork watershed</p> <ul style="list-style-type: none"> • Passage of adult salmonids into upper watershed and natural spawning • Construction and operation of two fish hatcheries to reintroduce, restore, and enhance anadromous fish populations in the North Fork Skokomish watershed, and to provide for commercial and sport fisheries <p>Wildlife habitat</p> <ul style="list-style-type: none"> • Restoration and enhancement of 2,750 acres wildlife habitat <p>Recreation</p> <ul style="list-style-type: none"> • Addition of 60 campsites and upgrades to the US Forest Service's Big Creek Campground and other recreation sites within and outside of the Project boundary • Improvements to Staircase Road to enhance recreation and water quality |
|---|---|

TACOMA POWER
TACOMA PUBLIC UTILITIES

F. CONCLUSION

There can be no doubt that this settlement only happened because Interior's authority to impose 4(e) conditions necessary to protect the Skokomish Reservation was upheld by the Court. The title of this hearing today is "Realizing the Potential of Hydropower as a Clean, Renewable, and Domestic Energy Resource." While hydropower may be clean and renewable, policymakers must consider that hydropower development can have devastating and in some cases irreversible impacts on people and resources.

The Skokomish Tribe bore the brunt of the cost of generating power at the Cushman dam for 86 years, even when there was a provision of the law that allowed the Federal Government to protect the Reservation. Today, unlike the 1920s, the Federal land management agencies better recognize their responsibility to balance the interest of energy development against their responsibility to protect the lands and resources that are a part of the public trust. This balance that is required by Section 4(e) is necessary for the United States to fulfill its solemn trust responsibility to Tribes to protect our homelands and our resources that were promised to us in the Treaties that we signed when we turned over millions of acres of land. Today, the Cushman Settlement is a model example of what is possible when this balance is made. The Skokomish Reservation is already seeing the benefit of the settlement through the ongoing restoration of the Skokomish River Estuary; restoration of historic land back to the Tribe; and soon a Sockeye hatchery will be open and because of this Sockeye will once again run up the North Fork of the Skokomish River.

Thank you for the opportunity to testify.

Dr. GOSAR. Thank you, Ms. Pavel.
Ms. Matlock, you are recognized for 5 minutes.

STATEMENT OF JESSICA MATLOCK, DIRECTOR OF GOVERNMENT RELATIONS, SNOHOMISH COUNTY PUBLIC UTILITY DISTRICT NO. 1, EVERETT, WASHINGTON

Ms. MATLOCK. Good afternoon, Chairman Gosar, Ranking Member Huffman, and members of the subcommittee. My name is Jessica Matlock, and I am the Government Relations Director for Snohomish Public Utility District. We are located in Everett, Washington, which is north of Seattle.

We serve a population of over 775,000 people, including critical industries like Boeing, and we have a local naval base. We serve our customers using 93 percent carbon-free energy, most of which is hydropower—that is 81 percent. We are also Bonneville Power Administration's largest customer. Our only carbon sources come from market purchases, our biomass clients, or from what BPA acquires.

In 2007, our elected board of commissioners adopted a climate change policy. That policy committed us to achieving all cost effective conservation and all future load go through renewable resources. As a result, we have aggressively implemented energy efficiency. We have added solar, wind, and more hydropower to meet these demands. But we did not stop there. We also researched and obtained a FERC license for one of the first-ever tidal energy projects in the Nation. We also drilled for geothermal, and we continue to look for it. We have installed and we are installing our third utility-scale battery storage system, as well.

But now I will talk about our baseload generation of clean, renewable hydro. In 2011, we completed the first Federal Energy Commission re-licensing of 112 megawatt hydroelectric project. I want to talk about two very important attributes of this project.

The facility also serves as a water supply for the city of Everett, and it was certified as low impact by the Low Impact Hydropower Institute in 2011.

We use this facility to also adapt to the changes in climate, protecting downstream fisheries resources, and I will give you a specific example. Just last summer, during our drought, it provided us powerful ability to regulate stream temperatures and flows to protect fish. If there was no dam, temperatures actually would have reached 75 degrees, and resulted in extremely low flows, as happened in adjacent rivers. And these conditions are lethal to fish.

We are one of the only utilities in the Nation still developing new hydro and its small hydropower. In fact, in 2011 we completed the first hydropower project in nearly 20 years in the state of Washington. It was a 7½ megawatt run-of-the-river project, which also became certified in 2012 to meet California's RPS standards for low-impact hydro.

In 2015, we constructed two 6-megawatt run-of-the-river projects which are free-flowing, and they are located above natural fish passage barriers. We are currently in the FERC preliminary process to construct a 30-megawatt—again—run-of-the-river project which requires no dam, weir, or other river barrier.

Hydropower projects can be built consistent with environmental values, and are an important tool in adaptive management, due to our changing climate. So what now for Snohomish?

Our energy demand continues to grow. In order to meet our climate policies, we must find and build new renewables. However, we cannot rely on energy efficiency, and we cannot rely on intermittent renewables, like solar and wind, because of the complicated nature of the grid. The grid has to have stability attributes, such as voltage support, reactive power, and spinning reserves. These cannot typically be supplied by intermittent renewables.

The only option we are left with is firm baseload power, and that is through the form of nuclear, gas, hydropower, and coal. But our own state policies prohibit building new coal plants, and our future state clean air rule is proposing to phase out and prohibit all gas plants. New nuclear interstate is not an option, so we are left with clean, renewable hydropower, but with an outdated and sometimes prohibitive regulatory framework.

As with anything, we should learn from the past and modify practices based on continued progress and improvement. In the modern era, we need to recognize the need for renewables and emissions-free energy sources. We need to modernize our regulatory processes and obtain better coordination. One example that we recently went through that we had issues with was a tidal energy project, the first ever in the Nation. It succumbed to current outdated process. This was our project. We spent 8 years trying to get this permitted. It was only supposed to take 6 years. We actually had to end the projects because of costs escalating beyond our control because it took us 8 years.

What other public utility has taken a bold step forward to research and develop new clean energy? This possibly revolutionary project died because of the delays that resulted from overlapping Federal and state environmental permitting processes. Now the PUD is working on a free-flowing, small hydroelectric project with

no dam located above natural fish passage barriers. And yet, we expect the process to take 10 years and face some of the same issues.

So, how is a green utility supposed to meet low growth? Ironically, the PUD could have taken the easy route by building an efficient gas plant, which would have taken far less time than building our hydro projects. We are not asking to circumvent nor erode environmental regulations. My last point, we are just asking you to update and modernize the FERC licensing process. Without improvement to this process, the PUD may have no choice but to abandon our carbon-free policies and priorities, and rely back on fossil fuels. Thank you.

[The prepared statement of Ms. Matlock follows:]

PREPARED STATEMENT OF JESSICA MATLOCK, GOVERNMENT RELATIONS DIRECTOR,
SNOHOMISH COUNTY PUBLIC UTILITY DISTRICT

INTRODUCTION

Good afternoon, Chairman Fleming, Ranking Member Huffman, and members of the subcommittee. My name is Jessica Matlock and I am the Government Relations Director of the Snohomish County Public Utility District (PUD) located in Everett, Washington. The PUD is the largest PUD in Washington, the second largest publicly owned utility in the Pacific Northwest, and the 12th largest in the country in terms of customers served. In addition to a population of 775,000 people, the PUD serves critical industries including Boeing and a local naval base.

The PUD serves its customers using 93 percent carbon-free resources comprised of hydropower (80 percent), wind, solar, biogas and biomass. We are the largest utility power purchaser from the Bonneville Power Administration (BPA) which markets power from the Federal hydroelectric system in our region. Our only carbon sources come from market purchases.

In 2007, the PUD's Board of Commissioners adopted a climate change policy, with a commitment to meet load growth first through all cost-effective conservation, then with a diverse mix of renewable resources. As a result, we have aggressively implemented energy efficiency, and added solar, wind and more hydropower to meet the demands of our customers. The PUD also is a leader in the development of new energy storage projects that are standardizing the way this technology is managed to make it more operationally and economically viable.

HYDROELECTRIC DEVELOPMENT

In addition to BPA hydro purchases, the PUD takes 20 percent of the power from the 27.5 megawatt (MW) Packwood Hydroelectric Project. The PUD also self-generates a significant amount of clean, renewable hydropower. In 2011 we completed the successful Federal Energy Regulatory Commission (FERC) re-licensing of our 112 MW Henry M. Jackson Hydroelectric Project which also provides water supply to the city of Everett. The PUD also owns the .65 MW Woods Creek Hydroelectric Project.

In addition, the PUD is one of the few utilities in the Nation that is aggressively developing new, small hydropower. Small, run-of-the-river hydropower projects can provide an important source of emissions free, renewable power. The PUD recently built the first hydropower project in Washington State in 20 years, and licensed two more projects in 2015 that are now under construction. The Youngs Creek Hydroelectric Project, which went on-line in 2011, is a 7.5 MW run-of-the-river facility generating enough power for about 1,500 homes. It received *Renewable Energy World* magazine's 2012 Hydro Project of the Year award and the 2012 American Society of Civil Engineer's Outstanding Achievement Award. The PUD's Calligan Creek and Hancock Creek Hydroelectric Projects, which received FERC licenses in 2015, are under construction. Calligan and Hancock are each 6 MW, run-of-the river renewable resource facilities.

The PUD currently is in the FERC preliminary permit process for the Sunset Fish Passage and Energy Project located on the South Fork Skykomish River. Sunset is proposed as a 30 MW, run-of-the-river renewable resource facility and is unique in that we have developed an innovative plan that utilizes natural water features to avoid the need for any dam, weir or other river barrier.

NEED FOR REGULATORY IMPROVEMENTS

We have proven that small hydropower projects can be built consistent with environmental values. However, the PUD's load will continue to grow and the PUD will need to find ways to meet this demand. The PUD's current portfolio of small hydropower projects consists of minimal impact projects which had been previously licensed by FERC. The PUD has consistently prioritized for development hydropower sites that would be low-impact. For the PUD to expand its portfolio, it is important to have a licensing process that works for a range of smaller projects.

Hydroelectric power is our Nation's largest renewable. However, the negative stigma of a bygone era of dam-building with insufficient thought to fish, water quality, and the interests of Native American tribes has left a regulatory process that has swung too far in the other direction. In a modern era where we recognize the need for renewables and emissions free energy sources, it makes no sense to continue to subject hydropower development to a complicated, many years-long licensing and permitting process.

For new proposed projects, licensing and permitting delays mean increased costs and uncertainty, and can prevent low-impact, environmentally sustainable projects from ever being developed.

After 8 years of regulatory delays in a FERC pilot license process that was supposed to take 6 months to approve one of the first tidal energy projects in the Nation, the PUD was forced to shutter the project after costs escalated beyond our ability to fund it. In addition, project opponents were able to delay the project through the complex and overlapping Federal and state environmental permitting processes to employ a strategy of "winning while losing." Now, the PUD is working on a free flowing, small hydroelectric project with no dam or impoundment located above natural fish passage barriers, yet we expect the process to take 10 years, and face some of the same issues with overlapping regulations.

PROPOSED SOLUTIONS

The PUD advocates a more streamlined, coordinated licensing and permitting effort managed by FERC to add more structure and certainty to the process. Timelines for the hydropower licensing process need to be tightened in order to keep viable, low-impact projects from being dropped based on the up-front costs to complete studies and protracted Federal and state permitting. For these reasons, the PUD supports the hydropower licensing improvements contained in the comprehensive energy bills, S. 2012 and H.R. 8. The PUD urges Congress to send legislation to the President's desk this year adopting these reforms.

CONCLUSION

How is a green utility supposed to meet load growth and demand, while also meeting the goal of being carbon-free? The PUD cannot meet even current demands solely through energy-efficiency and intermittent renewables. The PUD could have taken the easy route by building an efficient gas plant, which would have taken far less time than going through the FERC hydropower licensing process. For the PUD to meet its environmental policies and goals, that process needs to be streamlined and improved. Otherwise, the PUD may find that its current policy of pursuing renewables in place of fossil fuels to be prohibitively costly with an associated level of uncertainty simply too high for a load-serving entity like Snohomish to effectively manage.

I appreciate the opportunity to relate Snohomish County PUD's experience and challenges in developing clean, renewable hydropower for our customers.

SUPPLEMENT TO MS. MATLOCK'S TESTIMONY

**Keeping Things Chill for Fish in the Sultan
Snohomish County PUD
Highlights, by Bob Bolerjack
October 23, 2015**

As the operator of the Jackson Hydroelectric Project and Culmback Dam, the PUD embraces its stewardship role on the Sultan River.

A great example occurred this summer. A lack of run-off from the mountains following a warm winter combined with several blistering hot days to produce dangerous and, in some cases, deadly conditions for fish throughout the region. At par-

ticular potential for risk in the Sultan River were juvenile coho and steelhead, species that spend their first year of life in the river before heading out to sea.

As resilient as these species are, they're actually pretty fragile when it comes to water temperature. As rivers became too warm this summer, fish mortality rates rose in many of the region's rivers.

But not in the Sultan. Controlled releases of water by the PUD from Spada Lake reservoir behind Culmback Dam kept temperatures in the Sultan below 60 degrees, just where fish need it.

Managing the flows was a delicate balancing act this year. During the warmer weather months of April through October, Spada Lake typically is stratified, meaning the water has layers of descending temperatures—warmer toward the top, cooler toward the bottom. To take advantage of that, the dam features a selective withdrawal structure—panels that can be opened and closed to release water at four different levels.

That flexibility is important, because keeping the river cool all season long isn't a matter of simply releasing water from the bottom of the reservoir.

"We don't want to take too much from the bottom," said Senior Environmental Coordinator Larry Lowe. "We need to keep some cooler water in reserve in case we need it in September when adult fish are returning to spawn."

When conditions were at their most challenging this summer, Larry and Natural Resources Manager Keith Binkley were monitoring water temperatures frequently.

Probes at key points along the river provide readings every 20 minutes. By making adjustments to flows day-to-day during critical periods, they succeeded in maintaining their target of about 60 degrees.

"Throughout the summer, we were making lots of adjustments," Keith said. "By selecting water deeper in the reservoir, we made sure that throughout that hot period the fish weren't stressed and had optimal rearing conditions."

But it was especially challenging this year as the water surface elevation in the reservoir dropped throughout the summer.

The controlled releases complemented a PUD project from three years ago, when the utility created new habitat for juvenile coho and steelhead by constructing side channels on the Sultan where young fish could grow and thrive.

"The water tends to be warmer there because it's so shallow," Larry explained. "But even there, we were able to manage the temperature through controlled releases from the reservoir."

In a series of frequent checks throughout the summer, no dead juvenile fish were found in the Sultan. The side channels have clearly proven their value in protecting young coho and steelhead.

"It's kind of like we've created this Shangri-La for juvenile fish," Keith said. "There's nothing like it in the neighboring water bodies. So we'd expect that the juvenile fish in the Sultan would be in better condition, would grow better, and not be thermally stressed when they finally do migrate down."

It also illustrates the value of Culmback Dam, beyond providing the fuel for power generation and drinking water for most of Snohomish County.

"The beauty of the Jackson Project is that it's a relatively modern facility," Keith explained. "At a lot of the older dams, they would just build the intake at a fixed elevation where they could always deliver water, but that water would be extremely cold—too cold for a productive fishery."

Eventually as the reservoir dropped during the summer it would go from cold to warmer and warmer.

"When Jackson was upgraded in the 1980s, there was a greater understanding of the impact of temperature on fish, and the upgrade included a variable release option."

If there was no dam at all on the Sultan, temperatures this summer would have been similar to those on the neighboring Skykomish, which reached a lethal (to fish) 75 degrees.

"One of the benefits of dams is being able to have this cool water, especially in a warm year like this," Larry said. "It was a really great thing this year."

Even resource agency folks who are generally opposed to regulated systems were heard to say that years like this one should make us appreciate the regulation provided by reservoirs.

QUESTIONS SUBMITTED FOR THE RECORD BY REP. HUFFMAN TO MS. JESSICA
MATLOCK OF SNOHOMISH COUNTY PUBLIC UTILITY DISTRICT NO. 1

Ms. Matlock did not submit responses to the Committee by the appropriate deadline for inclusion in the printed record.

Question 1. Hydropower is one of several renewable, non-fossil fuel energy sources, but the construction and maintenance of dams can bring with it several negative environmental impacts, not only to fish and wildlife but through greenhouse gas emissions as well. These impacts include:

- The emission of methane from reservoir surfaces, turbines and spillways,
- Submerging and destroying large areas of carbon capturing forests and grasslands,
- Blocking the flow of critically needed sediment to feed starved coastal wetlands and beaches at risk from sea level rise,
- Impeding wildlife migration routes essential for climate adaptation, and
- Exacerbating the negative climate impacts on water quality, stream flows, and water loss due to reservoir evaporation.

How does the Snohomish County Public Utility District No. 1 address these broader issues related to species viability, methane emissions, sediment loads, and reservoir evaporation?

Dr. GOSAR. I thank the witnesses. At this point we will begin our questions for the witnesses. To allow all Members to participate, and to ensure we can hear from all of our witnesses today, Members are limited to 5 minutes on their questions. However, if Members have additional questions, we can have additional rounds if time allows us, or they can submit their questions for the hearing record.

After the Ranking Member and I pose our questions, I will then recognize Members alternatively on both sides of the aisle, in order of their seniority. I now recognize myself for 5 minutes of questioning.

Ms. Matlock, Mr. Boyd, and Ms. Powell, both the House and Senate energy bills have hydro re-licensing reforms. Do any of the remedies in either of the House or Senate bills undermine environmental protections or compromise tribal reservations?

Ms. Powell?

Ms. POWELL. Thank you. No.

[Laughter.]

Dr. GOSAR. OK. Mr. Boyd?

Mr. BOYD. I will echo the no, certainly. My understanding and read of the legislation is that it improves the process and leaves mandatory conditioning within the process, and it would have agencies engaging in the process sooner, rather than waiting for the end and bringing new information forward.

Dr. GOSAR. How about you, Ms. Matlock?

Ms. MATLOCK. No. We feel that the process creates a more timely and predictable process. In no way, shape, or form do we want to erode those environmental regulations.

Dr. GOSAR. My next question will go back in reverse order now. Is the status quo on Federal re-licensing acceptable, Ms. Matlock?

Ms. MATLOCK. No. Again, as I have proven out, it is actually stifling innovation.

Dr. GOSAR. Mr. Boyd?

Mr. BOYD. I would agree, it is stifling. We certainly work within the process, as it is defined now. But I do believe there are incremental improvements that could be made.

Ms. POWELL. And I agree, no. And to emphasize Ms. Matlock's points earlier, the way the process is right now, it is extended and it is prolonged. There are extensive costs that are essentially interest of the initial investment in that process that all of your constituents and my customers end up paying for.

Dr. GOSAR. Well, we are going to go back to the same three. Not one of you has suggested that the existing process must be turned upside down. Each of you testified that some modest improvements could be made to make the process more transparent and timely. Will these process changes harm the environment? Ms. Powell?

Ms. POWELL. No, I don't think so. PG&E really believes our natural resources need to be protected. We live in the same area where our company is. My employees live and recreate in the areas of the 16 rivers that we have projects on. We really value the beauty and the nature that exists there. The process modernizations that we have long supported do not allow FERC or hydro licensees to avoid compliance with the Endangered Species Act, the Clean Water Act, or any other Federal land management status.

Dr. GOSAR. How do you feel, Mr. Boyd?

Mr. BOYD. I certainly concur. As I mentioned in my testimony, we hold ourselves rightfully to a very high standard related to environmental stewardship at TID. And I think the incremental changes we are looking for in hydro re-licensing are Federal agencies to hold themselves to that same high standard of open and transparency in the process.

Dr. GOSAR. How about you, Ms. Matlock?

Ms. MATLOCK. I would just echo Mr. Boyd and Ms. Powell. But I would say that, again, we all live in this area, Snohomish, in particular, has the climate change policy which protects the environment. We prioritize our projects that look to create a limited amount of impact.

Dr. GOSAR. OK. Same three, and we will go back in reverse order.

Now, some have suggested amending Federal law to ensure that conditions imposed by natural resources agencies have a direct nexus to the proposed project. This seems like common sense to me, as why should rate payers pay for something that is not related to a hydropower project? Do you agree with this? And why, Ms. Matlock?

Ms. MATLOCK. Yes, of course, we believe in a more focused decisionmaking process. We think there should be nexus. But again, that is why we support the efforts of FERC to create a more coordinated effort.

Dr. GOSAR. Mr. Boyd?

Mr. BOYD. I concur. There has to be a project nexus. FERC has seven criteria to create that nexus, and we believe creating the

public record as part of the process would allow the agencies to accomplish that.

Dr. GOSAR. Ms. Powell?

Ms. POWELL. We agree. There are many situations where there are license conditions that are proposed that are well outside the impacts of the operations of our facilities in those rivers, and those seem to be an unnecessary burden to our customers.

Dr. GOSAR. I thank you. And look at the good example I left, 12 seconds there.

I now recognize Mrs. Napolitano for her 5 minutes.

Mrs. NAPOLITANO. Thank you, Mr. Chairman. It is very interesting hearing hydropower, because I have been working on recycling and other ways to combat the drought in California. So, I am glad to hear there is a lot going on in hydropower.

Mr. Boyd, Azusa Light and Water in my district operates a hydropower plant which receives water through a 6-mile underground conduit on Federal land, the Angeles National Forest, and that delivers 300,000 residents their water in the San Bernardino Valley with 3 megawatts of clean, renewable generation to Pasadena Water and Power. Seeing the ongoing drought and climate change, these deliveries are very much needed.

Azusa and Pasadena are working to re-license their plant with FERC. However, they are concerned how the pending input from U.S. Forest Service might impact their deliveries. They might make the cities perform additional studies after their FERC application, which I understand is a 50-year application. Their experience in dealing with them has been challenging and frustrating by the lack of engagement and transparency by the agency. Do you concur?

Mr. BOYD. I do. Although I am not intimately familiar with that project, it is my understanding that, like our project, it is a joint use project supplying both water and power to the region. And Azusa has tried to engage Forest Service on that, and had requests for studies that go well beyond the scope of the project.

That is about as much as I know on that, but it certainly dovetails with my experience on the Don Pedro Project with lack of engagement in the process in the beginning, and fear that there will be requests for further studies after the record is complete.

Mrs. NAPOLITANO. Well, what suggestions would you make for improvement?

Mr. BOYD. That resource agencies engage in good faith at the beginning of the process, and are part of the study-making procedure, and we develop a single record to be used in decision-making for re-licensing.

Mrs. NAPOLITANO. How much in advance?

Mr. BOYD. We started in 2009. If we could have all been on the same page in 2009 creating a single record, we would be a lot farther than we are today.

Mrs. NAPOLITANO. Thank you. Ms. Powell, the hydroelectric systems not only provide clean, cost-efficient energy, but also provide for fish habitat and wildlife, and of course, recreational opportunities. What steps has PG&E taken to protect, preserve, and enhance these natural resources? You indicated you lived there and you liked to see them there, but what is PG&E doing to promote the well-being?

Ms. POWELL. Thank you, Congresswoman. One of the largest projects that PG&E has been involved in that involves recreation and wildlife is the Battle Creek Restoration Project, which is in the northern part of California. It is a really large project, where it really made sense to modify our flows—there will be eventual removal of a diversion—and restore the flows to the natural, original flows to promote fish.

All of our licenses involve recreation opportunities for members of California. And one of our focus areas, as more and more Californians come out to recreate in and around our facilities, is assuring that they know how to do that in a safe manner.

Mrs. NAPOLITANO. I see. Do you work with the states to find out how well it can be done?

Ms. POWELL. We do.

Mrs. NAPOLITANO. Based on your industry experience, how do PG&E hydroelectric operations and procedures compare with other hydropower operations?

Ms. POWELL. We have benchmarked with other hydro operators, with similar facilities like ours, and with other industry associations, such as the National Hydropower Association and the Electric Utilities Cost Group. We find that we lead in many categories, including dam and facility safety and salmon and steelhead habitat restoration. We also find areas where we can learn from other industry leaders and improve our operations in that process.

Mrs. NAPOLITANO. Thank you.

Ms. Pavel, thank you very much for being here. And I understand the frustration your tribe must have had.

Ms. PAVEL. Thank you.

Mrs. NAPOLITANO. Thank you, Mr. Chairman.

Dr. GOSAR. I thank the gentlelady from California. I just realized that Arizona is surrounded by California here.

[Laughter.]

Dr. GOSAR. I now recognize the gentleman from California.

Mr. MCCLINTOCK. And we want our Colorado water back, Mr. Chairman.

[Laughter.]

Mr. MCCLINTOCK. Ms. Matlock, I wanted to explore the point that you made with regard to these unprecedented wind and solar mandates that we are seeing in states like California. The problem that has been described to me is that wind and solar are intermittent sources. They can fall off dramatically the moment the wind dies or a cloud passes over a solar array.

Since the electrical grid is integrated—that is we have to constantly match what is being drawn off the grid by putting more power on the grid—these intermittent sources require immediate backup availability. There are two ways of providing that backup ability. One of them is through hydro, where, with the flip of a valve, we can start generating power to meet the sudden drop-off in supply from wind and solar. The only other way are electrical generators that have to be kept at ready reserve. That is, constantly spinning. Not producing any electricity, but constantly spinning in the event that they are needed on a moment's notice. Is that essentially correct?

Ms. MATLOCK. That is correct. One other technology is battery storage, but it is still too expensive. But yes, you are right.

Mr. MCCLINTOCK. And yes, exactly right—very, very expensive.

Ms. MATLOCK. Correct.

Mr. MCCLINTOCK. So if we don't have hydropower available at a moment's notice, we have to spin these turbines at full power, burning fossil fuels in order to keep them spinning, even though they are not producing any electricity.

Ms. MATLOCK. Correct.

Mr. MCCLINTOCK. Is it logical, then, to say we are going to tear down hydroelectric dams and replace them with wind and solar?

Ms. MATLOCK. Well, for us, we are low deficit. So, in the future, we would have to build. So obviously, we will not be tearing down our dams, because they are a critical backbone for us.

Mr. MCCLINTOCK. Well, California and Oregon are intent on tearing down four perfectly good hydroelectric dams on the Klamath that are producing 130 megawatts of the cleanest and cheapest power on the planet. When I asked them how they plan to replace them, we were told, "Oh, wind and solar." Does that make sense?

Ms. MATLOCK. I cannot comment.

[Laughter.]

Mr. MCCLINTOCK. Well, let me go on. You mentioned the impact of dams on riparian habitats. Could you describe the typical riparian habitat in a severe drought?

Ms. MATLOCK. I am sorry, can you rephrase the question?

Mr. MCCLINTOCK. What happens to a riparian habitat in a severe drought?

Ms. MATLOCK. Well, in particular to ours, the vegetation dries up—a lot of our riparian habitat are side channels for small fry—

Mr. MCCLINTOCK. Water temperatures go way up?

Ms. MATLOCK. The water temperatures go down, the water levels go down—

Mr. MCCLINTOCK. They will go up in a drought.

Ms. MATLOCK. The water—right, sorry. The water temperatures go up, like I mentioned, 75 degrees.

Mr. MCCLINTOCK. OK. And what happens to riparian habitat in a blow-out flood?

Ms. MATLOCK. That is a good question. I would have to get back to you on that. I mean, obviously—

Mr. MCCLINTOCK. Let me ask you this. How do dams modify those extreme cycles of drought and flood?

Ms. MATLOCK. That is a good question, and that is what our Jackson Hydroelectric Project does. We actually regulate it with different types of gates. We are constantly monitoring the flows in the river, so that we maintain fishery flows. So, in a time of a drought—

Mr. MCCLINTOCK. Which you couldn't do without the dams?

Ms. MATLOCK. That is exactly right.

Mr. MCCLINTOCK. Mr. Boyd, how difficult is it to re-license an existing dam?

Mr. BOYD. Well, we haven't done it to completion yet, so I can't answer fully. But it is proving to be lengthy and a bit frustrating at times.

Mr. McCLINTOCK. And expensive?

Mr. BOYD. And expensive. Over \$20 million to date for 30-plus studies.

Mr. McCLINTOCK. Who pays for that expense?

Mr. BOYD. Our ratepayers.

Mr. McCLINTOCK. Those are the same folks that have to pay the added expense of running turbines at ready reserve and integrating wind and solar into their systems, is that correct?

Mr. BOYD. That is correct.

Mr. McCLINTOCK. Is that one of the reasons why California is paying among the highest electricity prices in the country?

Mr. BOYD. I don't think I can answer that directly.

Mr. McCLINTOCK. Ms. Powell, do you have any thoughts on that subject?

Ms. POWELL. We would have to get back to you on the cost.

Mr. McCLINTOCK. Well, please do. But in the meantime, what does this re-licensing process get us? These are dams that have already been constructed, or are already functioning. We already do safety inspections on them, so these re-licensing steps are not necessary to assure public safety, we do that anyway. So what are we getting for all of that—\$20 million in the case of your one instance? Mr. Boyd?

Mr. BOYD. So far we are building a record of information which could show how the reservoir and the facility could be operated to improve the fishery.

Mr. McCLINTOCK. And is that worth \$20 million? And how many months have you been working on this?

Mr. BOYD. We have been at this 7 years. I don't know that I can place a direct value on the monetary cost. But I can say, as the record has been created, I think it does show there are some clear things we can do to improve the fishery and move forward sooner, rather than later.

Mr. McCLINTOCK. Thank you.

Dr. GOSAR. I thank Mr. McClintock, and I now recognize the gentleman from California, Mr. Huffman.

Mr. HUFFMAN. Thanks, Mr. Chairman. I am a little concerned that my friend, Mr. McClintock's Republican Party status might be revoked because in one fell swoop he managed to attack both states' rights and private property rights.

It is true that California and Oregon, working together under existing law, under state law, are moving forward with a river restoration project. What was not mentioned, though, is that those four dams are owned by a private dam owner who wants to remove them. So, in one fell swoop we degrade violence to both states' rights and the idea that a private property owner ought to be able to dispose of their private property. Those are normally pretty major tenets of my colleagues across the aisle. But today they are being selectively targeted.

I want to ask you, Ms. Pavel, about the experience you had with the Skokomish Tribe. It has not been mentioned today, but I think maybe I will ask you to speak to this. There is a unique aspect to the law that allows FERC, while an applicant is pursuing re-licensing, to get an unlimited number of annual licenses. In fact,

I think the law requires them to grant an unlimited number of 1-year licenses on the original terms.

Ms. PAVEL. That is correct.

Mr. HUFFMAN. So, without any changes to address concerns such as the impacts you experienced to your tribe, could you sort of speak to that function of the law?

Ms. PAVEL. Well, no, that is absolutely correct. When Tacoma's license expired in 1974, FERC issued and continued to issue the annual licenses. Tacoma had the benefit of operating the Cushman Project as it was originally operational in 1930 until the new license was issued in 2010. And we have heard a lot about how to improve the process.

My tribe would have benefited if the process had been improved to go faster. If we could improve the role and the voice, and somebody said, "Well, how do you make it go faster?" I talked about how the tribe spent an inordinate amount of time making the Trustee engaged in the process. If we mandated, at least as to Indian reservations, that the Department of the Interior had to impose conditions to protect the purposes for which those Indian reservations were established, that would move the ball along a little faster.

Mr. HUFFMAN. Just out of curiosity, how many of these annual 1-year licenses on the original terms did you have to experience before the major impacts to your tribe finally got addressed in the re-licensing?

Ms. PAVEL. Twenty-four.

Mr. HUFFMAN. There were 24 separate annual renewals?

Ms. PAVEL. Yes.

Mr. HUFFMAN. Do you have concerns about the recently passed House energy bill and how that might limit the ability to quickly give consideration to tribal trust responsibilities and impacts to tribes?

Ms. PAVEL. I do. And again, I understand there is a desire to move this process along faster and to bring transparency to it. But my concern is the short time frame and the limited ability to get that timeline extended would result in Interior again abdicating its responsibility to the tribe. We cannot force Interior to impose conditions. And you well know that these agencies are so limited in their resources.

As the chart shows, there are a number of these projects coming up from licensing, and there is a complete lack of capacity. There is the Cushman Project for everybody, and you can see that most of the project is off the reservation. I believe it is not the intent of the drafters, but it would likely result in Interior abdicating its responsibility to my tribe, because they do not have the capacity to get their work done in that time frame.

Mr. HUFFMAN. Right.

Ms. PAVEL. And that is unfortunate.

Mr. HUFFMAN. Under the final re-licensing product, you were able to get some major improvements to address your concerns for your tribe, right?

Ms. PAVEL. Absolutely. And, Tacoma is here today. And the tribe and Tacoma have really become partners in this operation and this project. When you hear about Skokomish or flooding in the North-

west, you see that picture in the news, that is the Skokomish River.

But we talk about the highlights of the project, and it is fish passage, it is restoration of cultural and historic sites, it is in-stream flows that will address the flooding and increase channel capacity on the Skokomish River.

Mr. HUFFMAN. Thank you. I am out of time. But just very quickly, is there any doubt in your mind that with a weakened ability for the Department of the Interior to engage in those considerations you may not have all of those benefits?

Ms. PAVEL. There is no doubt.

Mr. HUFFMAN. Thank you.

Dr. GOSAR. I thank the gentleman. I now recognize the other gentleman from California, Mr. LaMalfa.

Mr. LAMALFA. Thank you, Mr. Chairman. It is awesome to hear a discussion about property rights, especially in Northern California, where three of the four dams that are on the Klamath are in my district, and my Siskiyou County constituents have one state or Federal agency after another coming after them for water rights, property use, introductions of wolves, pretty much everything that makes their life miserable up there is happening in Siskiyou County.

So, when I hear the so-called decision by PacifiCorp to remove dams that they want to, which is after much harassment over the dams not being able to be licensed, the state using the Clean Water Act, saying they are basically not going to get re-licensed, and the years of battle it takes to do that, when they finally succumb and surrender, that somehow that is them wanting to tear out the dams, and that could not be farther from the truth.

And Mr. McClintock has it very correct in his statement, that this is not voluntary, and that it is going to remove much hydroelectric power, which, in California, is now mandating that 50 percent of its power has to be renewable by the year 2030. Where is it going to come from? At the same time they are decommissioning windmills in the East Bay area, and you can't hardly get permits to build solar plants in the desert because of the desert tortoise, which already has 1.3 million acres set aside for desert tortoise protection. You can't hardly get a permit to do anything in California.

And speaking to one of the PacifiCorp reps, they are not going to replace the dams with other hydropower in Northern California, they are not going to replace with hydropower anywhere. They may get solar. Are they going to build the solar in California? No, they are going to build it somewhere else. So, my constituents lose jobs, they lose tax base, they lose all the way around. Once again, Siskiyou County is being victimized by an attack on their property rights and states coming after them. So I guess when states and other government entities are coming after people, it is our job to stop freedom from being trampled.

With that said, Ms. Powell, hydropower provides many benefits. We have heard it talked about—flood control, stored water, which means water for agriculture, water for people, and water for fish. And even now, since we have the luxury of regulating temperature in the river in the fourth or fifth year of a drought, it even provides

cold water pools behind dams that we can talk about in this process. I will bet even the water behind the dams up on the Klamath is probably colder at the bottom than the river would be in drought.

So, when we talk about the re-licensing and what it costs you, what it takes, you have license renewals that have taken between 7 years and I have heard even 28 years to get a renewal done. And Mr. McClintock said—I would like you to elaborate, please. What do we learn, since the dams are already in place, they have been built, they have safety checks and that type of regulation upon them. What do we learn from the stacks of documents and the years and the millions of dollars of re-licensing? What is actually useful that comes out of that? Mr. Boyd touched on that. At the end of the day, what is going to be useful in helping us have better protocols of these long, drawn-out, expensive re-licensing processes?

Ms. POWELL. Thank you, Congressman. I think the biggest thing that we learn from the studies is the impact that our operations have had on the environment, whether it be biologics or river areas. The repeated studies, with minor differences in the things that the studies look at—and these studies take years—

Mr. LAMALFA. So you can't get re-licensed until every study is done? Why so many years with the studies? Are we going to tear out the dam if we don't know? I mean should we tear out Shasta Dam, Lake Oroville, the Pitt River, everything on the Feather River because we don't know? Or why not just get licenses and learn as we go?

Dr. GOSAR. Some would like it.

Mr. LAMALFA. Yes, they would, see? Yes, they don't stop at the Klamath. It does not stop there.

Ms. POWELL. Can you rephrase that question?

[Laughter.]

Mr. LAMALFA. You don't have to touch the Klamath. I know you don't want to touch the hot potatoes, corporate people don't usually want to touch the hot potatoes. But the deal is—well, coming back to the original question, it costs so much. You don't learn that much. Why not get the license as we go, and continue to accrue the data, instead of having this painful process every year? Are we going to tear out the dams instead of having the license? What is the end goal?

Ms. POWELL. I think the end goal is to have something that the agencies and the involved members can agree on that is acceptable to all.

Mr. LAMALFA. Acceptable to which all?

Ms. POWELL. All of the stakeholders who are involved in the process.

Mr. LAMALFA. There are a lot of stakeholders that do not live in the area that do not care about the cost of electricity, either. The stakeholders are the ones that are actually the owners. That sounds like I have to stop. We will see you again.

Dr. GOSAR. The witness can answer. Do you have an answer?

Ms. POWELL. The stakeholders who were involved are the agencies. Other stakeholders end up being involved in the non-government organizations, the recreationalists. There are a lot of

interests that are around the re-licensings of these facilities that end up determining licensing conditions.

Mr. LAMALFA. And power users and workers outnumber all of them by miles.

Dr. GOSAR. OK, I thank the gentleman. I now recognize the gentlewoman from California, Mrs. Torres.

Mrs. TORRES. Thank you, Mr. Chairman. I will try to not ask a gotcha question, just a follow-up from testimony that I heard.

Ms. Matlock, in your testimony, the project that you were describing that should have been approved within 6 years, and you went 8 years and still had not received an approval, you abandoned that project. What is Plan B for you?

Ms. MATLOCK. Thank you for asking, because I actually need to clarify. It was 6 months. It is a pilot process, so it was supposed to be permitted in 6 months, and it took 8 years.

It is pretty disappointing, because this was a clean, renewable, brand new tidal energy. What other public utility district in the Nation do you know of that is doing R&D? This is not really something that is typical, but we believe in it, and we wanted local power. We worked with the tribes, we worked with endless committees. The future is very uncertain for that. We were heartbroken and ended the project.

Mrs. TORRES. So the project just ended and there is no alternative plan to move anything else forward?

Ms. MATLOCK. Not on tidal energy at this point. We are now looking to drill for geothermal and battery storage, but that is also super-expensive. We continue to look at other sources.

Mrs. TORRES. Toward the end of your testimony you mentioned something about storage.

Ms. MATLOCK. Yes.

Mrs. TORRES. Can you expand a little bit on that?

Ms. MATLOCK. Yes. We are investigating, modernizing, and standardizing energy storage systems, such that you can use any type of technology of battery and install it into our substations. And that ultimately will reduce the cost of batteries.

We are working with two different technologies, and it is a plug-and-play, where we have one substation, several different types of technologies, but you cannot just bring it in, these are big container-ship-size batteries. And because the interface communications between the battery and the utilities are standardized, it again reduces time and money.

So our efforts, again—a public utility trying to do an R&D project, breaking the mold, maybe in the future working with Tesla on these things, we would like to try to change the future of that, as well.

And again, just to continue with that, we are using that as a balancing ability and maybe peak shaving. There are several different ways that you can do batteries, and we are investigating that, as well.

Mrs. TORRES. Well, I want to encourage you to continue that. And I also want to applaud your efforts in investing in R&D. I think that that is really important. And you are correct, you don't hear a lot of that coming from the industry.

In my district, prior to the recession, there was a big push to do solar panels on warehouses. So, we have extremely large buildings that are utilized for the goods movement. And companies were moving toward that effort to not only lease the ground for the purpose of building a warehouse, but also lease the rooftops for the purpose of adding solar panels to power the warehouse and all of the equipment in there, and provide some energy back into the grid.

So, to the extent that we can do more of that, I also want to encourage my colleagues to push that type of development across their districts. Thank you.

Dr. GOSAR. I thank the gentlewoman and I will now recognize the gentleman from California, Mr. Denham, for 5 minutes.

Mr. DENHAM. Thank you.

Mr. Boyd, Turlock Irrigation District tried for 3 years to get the permit for the second predation study which was ordered by both FERC and the resource agencies, but were not approved for permits. Did the agency give any reason why the permits were not approved?

Mr. BOYD. Thank you, Congressman Denham. In 2012, the districts, as part of re-licensing process, performed a predation study on the Tuolumne River. The results of that showed that up to 93 percent of juvenile out-migrating salmon are consumed by non-native predatory species.

Once the results of that study were in, resource agencies requested an additional study that looked at the migratory habits of predatory species, looked at the river for predation, and you are correct, we tried for 2 years to get the permit. The first 2 years drought was cited as the reason for not getting a permit. And this past year, when we applied for the fish to do the study, we were told the study had no scientific merit.

Mr. DENHAM. So the study has no scientific merit, but government agencies are requiring you to do the study?

Mr. BOYD. Correct. The agency has requested the study. In consultation with the agency, we developed a study plan. FERC ordered the study, the districts agreed to do it. It had a cost of over \$1 million, I believe. And then the permitting agency would not give us the permit in order to do the study.

Mr. DENHAM. Seems political to me. It seems like some people just do not want the information that comes back from these studies, because you would actually save the fish that are threatened and endangered that are getting eaten by predator fish. Those that want to shut our water off and create this high unemployment in the Central Valley don't want to have the study. That is my own political view.

I understand one of the frustrations with working with resource agencies over the last 7 years is the lack of engagement and transparency throughout the process. Can you give me some examples of that?

Mr. BOYD. Sure, I would be happy to. One quick one that comes to mind is possible fish passage on the Don Pedro Project. FERC has ordered the districts to do studies related to fish passage. National Marine Fisheries Services are also doing their own studies upstream of the project. I am afraid we are going to end up

with a dual record, and to date nobody has been able to tell us what the decisionmaking criteria is related to reintroduction or fish passage in Section 18 prescriptions.

So kind of dovetailing with my testimony, we are held to a high standard of accountability, and we ask that the agencies be held to that same standard.

Mr. DENHAM. It seems like there is unequal bargaining power between the licensees and the resource agencies, oftentimes holding up the permitting process and costing you money in the process, moving forward on some of these.

Do you feel that there is a significant power disadvantage in a negotiation between you and some of these agencies that are not quite as transparent as we would expect government agencies to be?

Mr. BOYD. Based on my experience, as we sit down and try to negotiate creative solutions to improve habitat in the fishery, there are some agencies that are reticent to talk about creative solutions that might be different than what they could get through a mandatory condition; and I do believe that that keeps them from coming to the table in an open way.

Mr. DENHAM. Thank you. In my opinion, there are huge transparency issues with government agencies. And you are put in a position where you are negotiating with yourself. You are also put in a position where you are not only forced to expend money and see huge delays, but are not able to save the fish and meet the goals that are being pushed upon you.

If we are trying to save the threatened and endangered species, we ought to at least be able to do the studies that would back up or maybe prove the Ranking Member's point that maybe this just is not an issue. If studies show that predation is between 93 and 98 percent of the factor of killing these threatened and endangered species, we ought to at least be able to have the sound science to be able to address that. If we are going to address fish populations, we should do it in a collective, transparent way. I yield back.

Dr. GOSAR. I thank the gentleman and I recognize the gentleman from California, Mr. Costa.

Mr. COSTA. All right. Thank you, Mr. Chairman and Ranking Member. I don't know how long I will go here, because of the votes.

Let me make an editorial comment—I support all of the energy tools in our energy toolbox, including renewable sources of energy. I consider hydropower a renewable source of energy. Unfortunately, it is not politically correct with some of my friends to consider it a renewable source of energy.

Having said that, Mr. Boyd, Turlock Irrigation District's energy resources are very diverse, as you noted in your testimony. You have large hydropower, small hydropower, natural gas, and wind. Can you compare me the time it took to get the approval rating and the permitting process to construct your project called Almond 2, or your 174 megawatt natural gas project, versus your current experience in trying to re-license your Don Pedro hydropower project?

Mr. BOYD. Thank you. I would be happy to.

Mr. COSTA. Quickly.

Mr. BOYD. As I mentioned, we are 7 years into the re-licensing process for Don Pedro. For the project you mentioned, Almond 2, it was 1999 to 2012, I believe, 3 years to site, permit, and construct the plant.

Mr. COSTA. Three years versus 7 years and you are still going.

Mr. BOYD. Correct.

Mr. COSTA. Something has to be wrong with that part of the process, I would think.

I understand under current law resources agencies are to consider power and non-power benefits. In your experience, do they? Also, do these agencies have the authority to make these decisions? And how do they make it, since you are 7 years into the process?

Mr. BOYD. I believe, under the Energy Policy Act, FERC certainly has the jurisdiction to consider power and non-power benefits of the project. I do not believe resource agencies are under that same jurisdiction.

Mr. COSTA. OK. Ms. Powell, I have heard claims by some groups that pending legislation before Congress alters the Federal Power Act, including roles that Federal agencies play in licensing and re-licensing in this process. In fact, I have heard claims that legislation would allow the hydropower licensee to harm fish, wildlife, public lands, Indian reservations with impunity.

Do any of these recommendations that you have outlined in your testimony do such a thing?

Ms. POWELL. PG&E believes that our country's natural resources need to be protected.

Mr. COSTA. So you don't want to harm fish?

Ms. POWELL. We don't want to harm fish.

Mr. COSTA. You don't want to harm public lands or Indian reservations?

Ms. POWELL. We do not.

Mr. COSTA. You have a responsibility to deal with all of these issues, right?

Ms. POWELL. We do.

Mr. COSTA. My last question—what is the financial impact on the end power to the consumer related to a re-licensing project, in your estimation, given your experience?

Ms. POWELL. In the last 10 projects that we have re-licensed, which involved existing operational facilities, fully constructed facilities, the regulatory process for the re-licensing took between 7 and 28 years to complete, the costs ranging from \$2 million to \$20 million. That was only to get through the re-licensing. After that, we were required to expend funds to implement the new license conditions.

Mr. COSTA. All of those costs pass on to the ratepayer?

Ms. POWELL. Yes, they do.

Mr. COSTA. Well, thank you very much. We will submit additional questions, Mr. Chairman.

And thank you for continuing to try to make sure that energy remains viable and cost effective for American consumers.

Ms. POWELL. Thank you.

Dr. GOSAR. I thank the gentleman. I would like to thank the witnesses for their valuable testimony. They called votes, so we have about a minute left.

Members of the subcommittee may have additional questions for the witnesses, and we will ask you to respond to those in writing. The hearing record will be open for 10 business days to receive their responses.

If there is no further business, without objection the subcommittee stands adjourned.

Now you understand what Arizona does between the California firing squad.

Meeting adjourned.

[Whereupon, at 3:23 p.m., the subcommittee was adjourned.]

